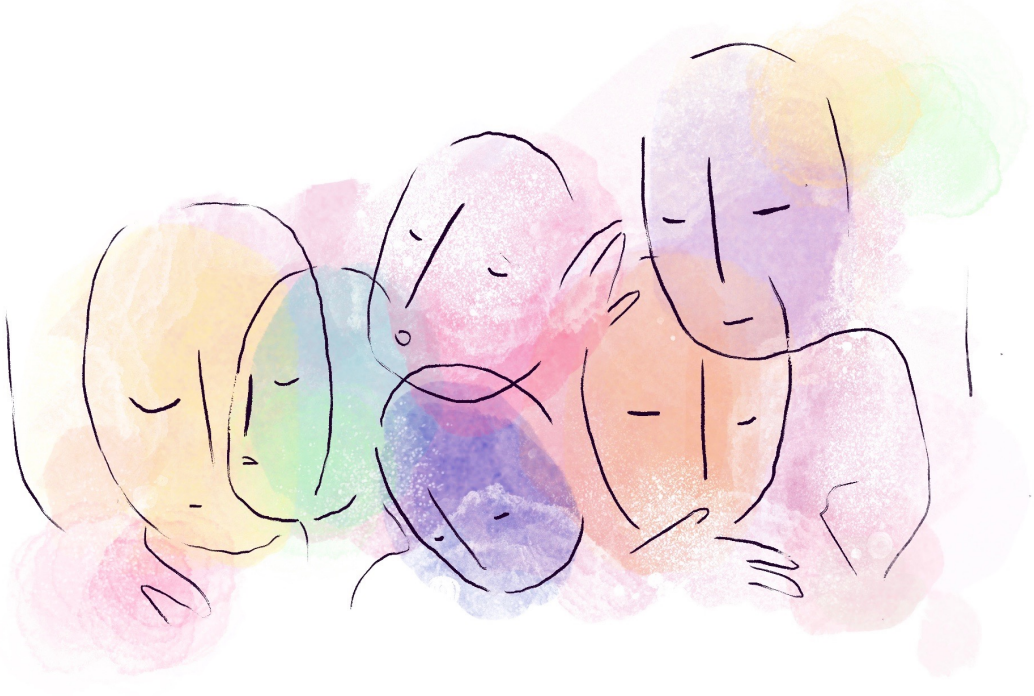

Laura K. Horton

Collaborative Game Development with Indigenous Communities

A Theoretical Model for Ethnocultural Empathy

Master's Thesis

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Master of Arts thesis abstract

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Abstract

This thesis studies how collaboratively designed games can be used as a means to empathically share cultural perspectives and emotions between unrelated communities. The paper also discusses some of the diversity issues present within the video game industry, especially those dealing with Indigenous cultural content, and to promote the "world games" movement of inclusive game production.

The project began with an examination of various concepts that make up the current psychological theory of empathy. Academic findings on cultural empathy were specifically explored, and Wang et. al's (2003) theory of ethnocultural empathy was examined. A literature review continued with further examination of the methods for empathic game design and production. The literature also considered how specific game elements and practices of intercultural sensitivity function within collaborative game design and development, leading to a more in-depth study of co-development with Indigenous communities.

From this, two theoretical models were developed and proposed. The *Ethnocultural Empathy Analysis* model looked specifically at methods for e-empathic game design, and the *Intercultural Sensitivity* model presented reflective questions for Indigenous co-development. These models were then applied to three game project case studies. Two of the studies examined the commercial games, *Never Alone* and *Mulaka*. The third study, the *Sámi Game Jam*, included a personal reflection of my first-hand experience in an Indigenous co-development setting.

Finally, the results of this thesis proposed ways that games, as a unique, interactive medium, can be successfully used to both address, and even eliminate, much of the cultural disconnection and ignorance present in today's world.

Keywords empathy, ethnocultural, culture, games, game design, indigenous, collaborative, game development, intercultural

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Chapter 1. Introduction

1.1 Foreword

During the final year of my undergraduate education, I had the opportunity to take a combined *Concept Art and Game Writing* course and through it, grew interested in exploring culture and empathy in games. Though I had always loved the immersive nature of video games, I began to realize that games are an excellent medium for discovering new cultures and perspectives. I was enthralled with big and small games that explored provocative and serious concepts such as emotions, compassion and social change. For my final Bachelor's thesis then, I began actively researching culture and video games, and emerged from my undergraduate studies with a concept for a game I hoped would one day explore these themes.

Later in November of that year, my interest was piqued again when a new video game named *Never Alone* was released. Although the art style and gameplay caught my eye, what really attracted me was the developer's claim that *Never Alone* was the beginning of a new genre of game called "World Games" (Never Alone Blog, 2014). They suggested that "World Games" would spark the beginning of a new movement of culturally inclusive games. Having just completed a Bachelor's thesis on empathy, culture and games, I was excited to learn that professional game developers were beginning to address these topics. While playing the game with my family, I became passionate about helping create "games for change," ones that were both artistic and emotional while empathically exploring diverse perspectives and stories from around the world. Unfortunately, since I was no longer in an academic community, I wasn't able to actualize my dream for a few more years.

Two years later, I decided to pursue a Master's degree, specifically wanting to study in Europe because I knew it would be a unique opportunity to explore these ideas in a richly diverse intercultural setting. Toward the end of 2016, after being accepted into Aalto's *New Media Game Design and Production* program, I was finally able to start applying these concepts to concrete practice. At Aalto, it was wonderful to finally collaborate with teams and make playable games during game project courses. Happily, my studies also introduced me to the *Finnish Game Jam* community. Game Jams really appealed to me because they were short, fun, and informal experiences where students and developers alike could prototype innovative ideas. In fact, in 2017 and 2018, I ended up loving game jams so much that I

participated in as many of them as I could fit into my schedule. It was one of these awesome game jam experiences that ended up sparking the idea for my thesis.

Halfway through the Master's program, I began to think seriously about what I wanted my final thesis to address. I still had those earlier notions about games and culture, but my main topic didn't emerge until I heard about a new event, the *Sámi Game Jam*. It was like a light turned on in my head. I knew that if I wanted to explore world games seriously, then I needed to be a part of this jam. I applied and was thrilled to be accepted. My excitement was well warranted as it ended up being a fantastic experience that totally changed my perspective of the world. My earlier passions reignited, I came back feeling like a different person, one who *needed* to seriously research these topics and see what I could learn from them.

My initial intention was to actually create some kind of game prototype. Although I did work with a talented team at Media Lab developing a VR game, as the research progressed I realized that my focus was becoming more theoretical than practical. Though I learned much from the game we were creating, for the purpose of my thesis, I realized it was important for me to concentrate on theory and leave actual game production until a future time. In another unforeseen development, although I had set out to address my interest in empathy, games, and culture, I ended up discovering a new passion for collaborative development as well, specifically, inclusive production with Indigenous communities. In hindsight, this shouldn't have been much of a surprise because *Never Alone*, that first "World Game," was really where this all began.

Because of the sensitive nature of this topic, I would like to conclude this foreword with several disclaimers. I am not, nor do I claim to be, either an anthropologist or a psychologist. Also, as a game artist and designer, I shall never be, nor shall I ever claim to be, an expert on these topics, especially since I possess the perspectives and privileges of a non-indigenous person. However, I believe that this is a crucial topic that should be thoroughly discussed and shared with researchers, game developers, and Indigenous communities alike. Finally, above all else, I hope that this thesis will be viewed in the respectful and sensitive manner that I intended. As anthropologist Barbara Myerhoff said, "If I can, in my work . . . make it clear who they are, what they feel, and pass that through me and out into the world, then my work is done" (Jayanti & Littman, 1985 cited in Williams, 2018).

1.2 Research Questions and Objectives

At first glance, the combination of empathy, culture and video games seems to be an obvious one. In reality, even today the application of culture and empathy to games hasn't really been adequately explored within game studies. And although there have been a number of games, commercial and otherwise, which have included Indigenous content, most have strayed into the common pitfall of appropriation and stereotyping. This is regrettable because, due to their accessibility and interactivity, games have the unique and dynamic capacity for social empowerment and world change. While games should remain entertaining, they are also great tools for humans to explore new perspectives and grow in empathy for others.

Games are not only an artistic and popular medium, but one that can create an accessible, inclusive space for sharing perspectives, promoting intercultural empathy and improving today's world in real ways. The collaborative and respectful development of games with Indigenous communities is especially paramount because, for centuries, most have had to fight for their own voice. Game developers who choose to explore Indigenous perspectives should realize that game production is an amazing opportunity to engage with an often-marginalized Indigenous community. In fact, it is the ethical responsibility of these developers to create games that, in the end, address the real-world issues and problems that these communities face. Finally, properly designed empathic games are an opportunity for Indigenous communities to reconnect with their own cultures and begin to repair our world's cultural misunderstandings.

With this in mind, this thesis will begin by examining contemporary research on empathy and culture. It will study in depth the current psychological theories that make up empathy research and their function within intercultural settings. However, because of the subjective nature and vast number of empathy theories, this research will primarily be limited to literature focusing on *cultural* empathy, as well as literature that discusses game design and production, including collaborative development with Indigenous cultures. The three case studies presented in Chapter 4 will only include game projects that incorporate these topics.

Finally, this thesis will explore a number of different concepts including culture, Indigenous culture or "living culture," game design, inclusive production, and empathy. These terms

will be covered in more detail in later chapters. First and foremost, however, the concept of culture must be defined.

What is culture?

When thinking of culture, one usually associates the term with various traditions and beliefs that exist within a certain community. This is essentially true, as culture encompasses the cross-generational experiences, beliefs, values, and identities shared between a specific group of people (Ariffin, Ahmad, & Sulaiman, 2015, p 112). An individual's culture can be based on shared race, ethnicity, history, location and/or societal traditions, i.e., religious or spiritual beliefs (Mohammed & Mohan, 2011, p 21). Thus all humans possess, in some way, a sense of "culture," be that the culture they inherited or the culture they have created throughout their lives. For the purpose of this thesis on empathic game design, however, references to culture will primarily refer to *Indigenous* cultural content.

So, what is an *Indigenous culture*? Sometimes referred to as "living culture," Indigenous culture is a specific community's "practices, representations, expressions, knowledge and skills" which are passed down from each generation (UNESCO, n.d.). This "cultural heritage" is fostered by a community's sense of identity in response to their natural environment. Thus, *Indigenous communities* are ethnic groups native to specific geographical areas who have formed cultures. *Living culture* is called "living" because it is intangible, as "its existence and recognition depend mainly on the human will" (UNESCO, n.d.). And because of a living culture's fluid nature, the preservation and safeguarding of their sacred traditions, arts, practices, rituals and knowledge are considered paramount for the wellbeing and empowerment of cultural minorities (UNESCO, n.d.).

Throughout the development of this thesis, these concepts of Indigenous culture, empathy, and games were explored, and eventually, three research questions were formulated. They are as follows:

> *Can games be designed to encourage ethnocultural empathy?*
>
> *What game design methods and/or elements can be used to elicit empathy in players?*
>
> *How can designers work sensitively with Indigenous communities during game development?*

With these questions in mind, the final goal of this thesis is to discuss games which have the potential to present diverse perspectives to those who might not normally experience them. Hopefully, this thesis will be seen as a call for action within the video game industry, to inspire academic researchers and developers (commercial or otherwise) to start looking seriously into more inclusive development methods, especially with Indigenous communities. And ultimately, to start paving the way for more diversity and Indigenous representation within the game industry. During a time where there is so much division, this thesis aims to promote games as an inclusive medium with which we can begin to restore our world's damaged intercultural connections.

1.3 Contents of the Thesis

The thesis is composed as follows:

Chapter 1. Introduction, includes the forward, research questions and objectives, and the contents and methodology of this thesis.

Chapter 2. Empathy and Culture, begins with a general overview of contemporary empathy research literature. It then proceeds to examine theories of ethnocultural empathy as defined by researchers Wang et al. (2003) in their paper *The Scale of Ethnocultural Empathy*. Their psychological theory is further divided into three components, *intellectual, empathic emotions* and *communicative*.

Chapter 3. Ethnocultural Empathy and Game Design, continues the literature review by defining games and exploring elements of game design that researchers report most commonly elicit empathy and ethnocultural empathy. Additionally, this research is examined through the lens of ethnocultural empathy, specifically looking at its three components, intellectual,

empathic emotions, and communicative. The final section of this chapter reviews various literature on collaborative game development with Indigenous communities and discusses how the psychological theory of intercultural sensitivity can be applied to game production.

Chapter 4. E-empathic Game Projects: Case Studies, contains the formal game analysis of this thesis by presenting three case studies. The chapter begins by introducing the ethnocultural/ analytical model developed from the literature reviewed in Chapters 2 and 3. This model is then applied to two commercial video games which were co-developed with Indigenous communities, *Never Alone (Kisima Ingitchuna)* and *Mulaka*. The chapter also includes a personal reflection and short analysis of my 2018 *Sámi Game Jam* experience.

Chapter 5. Conclusion, finalizes the research and formal game analysis conducted within the thesis. This chapter discusses the various learning outcomes, questions, and limitations suggested by this research. Finally, the chapter makes conclusions and proposes potential future research for collaborative Indigenous development and ethnocultural empathic game projects.

Appendices A and B, present the *Ethnocultural Empathy Analytical Model* and the *Intercultural Sensitivity Model* developed and used within this thesis. Appendices *C through G* include the game elements recorded from the game projects and the formal game analysis of *Never Alone* and *Mulaka* respectively.

1.4 Methodology

In the formulation of this theoretical thesis, a number of methods were utilized. Within the literature review, contemporary academic research on empathy, culture, and game studies were all considered, beginning with a review of generally acknowledged psychological theories on empathy and ethnocultural empathy. The project continued with more research focused on game studies and empathic game design, consisting of various academic articles, thesis's, books, and research papers. These references were primarily accessed through sources such as *Aalto Finna, Google Scholar*, and other online databases. Also because the topic of *ethnocultural empathy and Indigenous game design* is still quite new, this thesis referenced a number of informal video interviews, websites, and game development blogs.

The primary sources referenced in this thesis include literature by a number of empathy and game researchers, predominantly Wang et al.'s (2003) study *The Scale of Ethnocultural*

Empathy, Jesse Schell's (2008) *The Art of Game Design: a Book of Lenses*, and Aki Järvinen's (2008) doctoral dissertation *Games without Frontiers*. Additionally, research for collaborative development with Indigenous communities was conducted, whose primary references included Elizabeth LaPensée's (2014) doctoral dissertation *Survivance* and Naithan Lagace's (2018) paper *Indigenous Representations and the Impacts of Video Games Media on Indigenous Identity*. The theories and conclusions from this research were carefully examined and eventually used as a theoretical foundation for the proposal of a formal analytical model.

This theoretical model was then utilized in a qualitative analysis of three game projects, including two commercially produced games and my personal game jam experience. The two games, *Never Alone* and *Mulaka*, were chosen for their unique depiction of and collaboration with specific Indigenous communities. The analysis was based on observations recorded from multiple game playthroughs and online video walkthroughs. To cover their co-development more completely, additional research on these specific game projects, their cultures, and their methods for inclusive production were also examined. The reflection on the *Sámi Game Jam*, a 5-day game development event in Utsjoki, Finland where I co-created games with members of the Sámi community, was included because it was an actual opportunity to personally experience and reflect on collaborative game development with an Indigenous community.

Finally, based on the literature review in Chapter 3, a second smaller model for inter-culturally sensitive game production was developed. This theoretical model was, in turn, applied to all three case studies. In short, from this research, the thesis proposes two theoretical models, one on ethnocultural empathy and the other on intercultural sensitivity, to encourage respectful game co-development and production with Indigenous communities.

Chapter 2. Empathy and Culture

Introduction

Before this thesis can begin to examine game design through the lens of ethnocultural empathy, it must first explore the current theories that define *empathy*. Therefore, this chapter will first provide a general overview of empathy research and then examine the psychological concept of ethnocultural empathy more specifically. By exploring various literature on empathy from general terms to more ethnocultural-specific terms, this chapter aims to provide an initial theoretical basis for the works studied in later chapters. The scholarly articles and books used for this research were selected based on searches through sites such as *Google Scholar* and *Aalto Finna*, while others were discovered through citations from assorted literature. In later chapters, some of this research also utilizes various online magazine articles, video interviews, and webpages.

The chapter is outlined as follows: Section 2.1 *Theories of Empathy* will contain a summary of the most accepted psychological theories of empathy. This section will be subdivided into the two terms suggested by Duan and Hill (1996), *intellectual empathy* and *empathic emotions*. Section 2.2 *Ethnocultural Empathy* will specifically investigate *ethnocultural empathy* as defined by Wang et al. (2003) with their Scale of Ethnocultural Empathy. This section will also examine the three suggested domains for this empathy construct: *intellectual, empathic emotions*, and *communicative*.

2.1 Theories of Empathy

2.1.1 Overview

In the late 19th century, Robert Fischer suggested the term *Einfiihlung* or *feeling into* to represent humanities' impromptu projection of feelings onto people and objects (1873; cited in Duan & Hill, 1996 p 261). It wasn't until 1909 that Edward B. Titchener first coined the term as *empathy*. Since then a wide-ranging interest in empathy has grown from numerous disciplines beyond the area of psychology. In fact, it is currently believed by many to be an essential "basis [for] all human interaction" (Duan & Hill, 1996, p 261-262).

In Duan and Hill's (1996) review on empathy research, the term empathy and the different constructs that make up its psychological theory were examined. They found that while some theorists view empathy as an ability, others see it as "a situation specific cognitive-affective state" (Duan & Hill, 1996, p 262). Yet others consider empathy to be a progression of social experiences. Nonetheless, it is widely acknowledged that empathy is considered to be a phenomenon that allows for the understanding of another person's emotions and/or experiences (Duan & Hill, 1996, p 262-263).

In psychology literature, empathy is generally agreed to consist of two components: affective and cognitive. The terms commonly used for these components are *cognitive empathy* and *affective empathy*. Cognitive empathy refers to the ability to take on another's perspective in an intellectual way, whereas affective empathy refers to matching corresponding emotions with that of another person (Constantine, 2000, p 858-859; Johnson, 2012, p 150). Some say that, depending on the situation, empathy can contain both components. To minimize confusion, Duan and Hill (1996) suggest that researchers should avoid these intersecting terms. Instead, they proposed using *intellectual empathy* for the cognitive process and *empathic emotions* for the affective. Because these terms have been used so interchangeably within empathy research, for the purpose of this thesis, the terms defined by Duan and Hill (1996) will primarily be used (Duan & Hill, 1996, p 263).

2.1.2 Intellectual Empathy

Intellectual empathy, also known as *cognitive empathy* or even *cognitive role taking*, is thought to be the ability to understand another person's mental state or perspective (Eisenberg & Miller, 1987, p 91). Intellectual empathy seems the easiest to comprehend because it is logical to suppose that the basic understanding of another's thoughts is an essential prerequisite for empathic behavior (Oswald, 1996 p 615).

There are many theorized degrees of cognitive processes within the intellectual empathy model, ranging from simple (e.g., classical conditioning) to more advanced. Here we will focus on that which has received the most empirical evidence, *cognitive perspective taking.* Cognitive perspective taking, or just *perspective taking*, is considered the most advanced cognitive process as it involves mentally embracing the perspective of another person. Acknowledged as a difficult process, this entails actively suppressing one's own point of view while simultaneously accepting another's (Davis, 2015, p 283-284).

Sometimes referred to as "seeing through one's eyes," this process includes having an intellectual understanding of the similarities and differences between one's self and another person (Kerem, Fishman, & Josselson, 2001, p 717, 722). Overall this cognitive component mainly involves the comprehension of another's thoughts and/or behaviors (Strayer 1990, p 219).

2.1.3 Empathic Emotions

Sometimes referred to as *affective role taking*, *empathic emotions* is considered an emotional state obtained from the awareness of another's feelings (Eisenberg & Miller, 1987, p 91). Empathic emotions are usually seen as a "shared affect or vicarious feeling," although sometimes they are also described as a phenomenon where emotions are instantly shared between people (Kerem et al. 2001, p 712).

At the heart of empathic emotions is the ability to adopt another's emotions, or *emotional contagion*. Emotional contagion is exhibited through responses that can be either identical or complementary, i.e., a smile triggering another smile versus an angry expression inciting fear. This phenomenon has many levels; first an eliciting emotion arises, then once recognized by another person, it produces an equivalent emotion within them. The consequence of this emotional contagion is an emotional and/or behavioral synchronization between two or more people (Hatfield, Cacioppo, & Rapson, 1993, p 4-5).

Davis (2015) divides the affective outcomes of empathy between *parallel* and *reactive*, both of which he considers empathic reactions. He defines a *parallel emotion* as a typical non-cognitive response i.e., the *emotional matching of* another's feelings. However, *reactive emotions* are defined as *empathic responses to* another's experiences (Davis, 2015, p 284).

Reactive emotions can be further subdivided into two scales, *empathic concern* and *personal distress*. Empathic concern, possibly evoked by emotional contagion, is "an other-oriented response" that corresponds with the emotional distress of another person. Personal distress, alternatively, is a self-seeking emotional response (Lamm, Batson, & Decety, 2007, p 43). In other words, empathic concern is thought to be the compassion one feels in response to another's suffering, while personal distress is self-centered feelings of discomfort in response to someone else's suffering.

These affective responses each have specific behavioral consequences. For instance, selfless behavior is more likely to arise from empathic concern, while personal distress may instead

create egotistic behavior (Batson et al., 1987 cited in Lamm et al. 2007, p 56). As a "self-centered vicarious arousal," personal distress could also represent the most primitive form of empathy (De Waal, 2008, p 288). However, as there is no agreement on this in psychology literature, more research on the topic is required.

2.1.4 Conclusion

Recently, many researchers have approached the study of empathy more multidimensionally, as cognitive and affective components are both considered essential. Other data has suggested that while these components may significantly overlap, empathic emotions could be considered relatively independent (Kerem et al. 2001, p 714; Rogers, Dziobek, Hassenstab, Wolf, & Convit, 2007, p 709, 714).

In fact Oswald (1996), theorized that empathic emotions lead to considerably more altruistic behavior than intellectual empathy, and both lead to more selfless helping than none at all (Oswald, 1996, p 620). Using the model created by Davis (2006), empathy is comprised of an individual's responses to the experiences of another (illustrated in Figure 2). This includes the person's cognitive processes and their resulting affective outcomes (Davis, 2015, p 282-283). Overall, the general consensus is that both empathic emotions and intellectual empathy produce valuable outcomes that can lead to prosocial empathic behavior (Davis, 2015, p 297-298; Kerem et al. 2001, p 724).

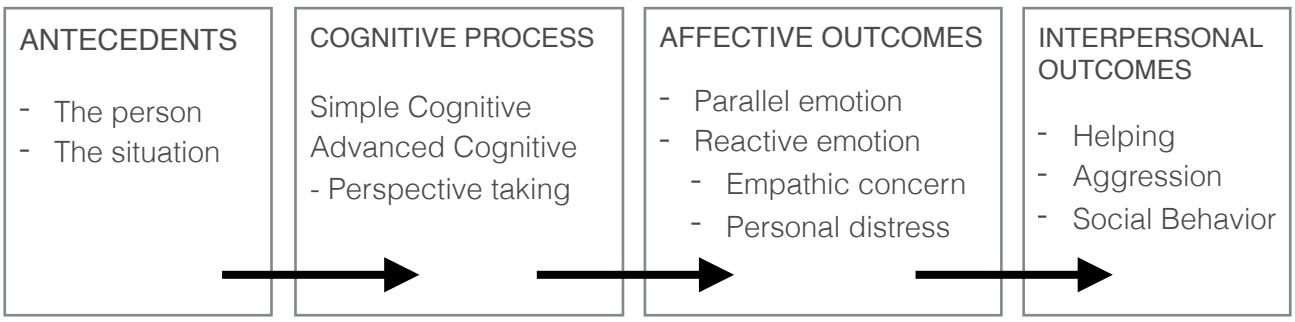

Figure 2. Organizational Model of Empathy. Adapted from *Handbook of the Sociology of Emotions* (p. 444), by M. Davis, 2006, Boston, MA: Springer. Copyright 2006 by Springer Science+Business Media, LLC. Adapted with permission.

2.2 Ethnocultural Empathy

2.2.1 Overview

In psychology literature, a variety of interchangeable terms ranging from *cultural empathy* to *ethnic perspective taking* have been used to describe empathy within intercultural situations. Throughout this thesis, however, the term suggested by Wang et al (2003) *ethnocultural empathy* will be used (Wang et al. 2003, p 222). This is defined as, "empathy directed toward people from racial and ethnic cultural groups who are different from one's own ethnocultural group" (Wang et al. 2003, p 221). In other words, it means the ability to empathize emotionally and thoughtfully with those from other cultural backgrounds (Van Oudenhoven & Van der Zee, 2002, p 680).

Recently, a growing number of scholars have begun investigating ethnocultural empathy, both cognitively and affectively, as a way to promote cross-cultural understanding. This is due, in part, to the increased interest in ethnic and multicultural issues today, especially since the current resurgence of global racial tensions (Wang et al. 2003, p 221). Some have proposed that a greater level of cross-cultural communication and recognition is required (Sue & Sue, 1999 cited in Wang et al. 2003, p 221). It is this idea that forms the core of Wang et al.'s ethnocultural empathy construct.

In 2003, Wang et al. developed *The Scale of Ethnocultural Empathy* (SEE for short). Their theoretical construct was based on the hypothesis that ethnocultural empathy is a personal skill that can be taught and evaluated. Using the cultural empathy model speculated by Ridley and Lingle (1996), their study proposed that ethnocultural empathy is composed of three domains: *intellectual, empathic emotions,* and *communicative* (Gerstner & Pastor, 2011, p 4; Wang et al. 2003, p 222). These authors both claim that although the multidimensional nature of empathy allows for considerable overlap between these domains, they still each individually embody a specific aspect of ethnocultural empathy (Gerstner & Pastor, 2011, p 4). As you recall in section 2.1.1, these terms, intellectual empathy and empathic emotions, are derived from those coined by Duan and Hill (1996) respectively (Duan & Hill, 1996, p 263; Wang et al. 2003, p 221).

2.2.2 Intellectual

The intellectual process of ethnocultural empathy contains both cognitive perspective taking and the ability to distinguish another's cultural differences from oneself (Gerstner & Pastor, 2011, p 4-5; Wang et al. 2003, p 222). In general, this domain contains the ability to understand the different ethnic thoughts, feelings and/or perspectives of those from other cultures. This also includes the ability to adopt a differing cultural viewpoint of the world. It is easy to grasp that for these abilities, the use of *perspective taking* is crucial (Wang et al. 2003, p 222). This process is the most mentally engaging of the three and requires a high level of active contemplation from the individual. The intellectual domain is considered essential when one is asked to deeply empathize with people of other cultures.

2.2.3 Empathic Emotions

As the affective process of ethnocultural empathy, empathic emotions includes the ability to match emotions with and express empathic concern towards people of other cultures (Gerstner & Pastor, 2011, p 4-5; Wang et al. 2003, p 222).

As mentioned earlier in section 2.1.3, this domain focuses on the corresponding emotional responses felt between people, in this case those of different cultural backgrounds. This includes (1) an individual's emotional reaction to the emotional state of those from other ethnic groups and (2) recognizing another person's feelings to such an extent that one is able to feel with them from their cultural perspective (Wang et al. 2003, p 222). An example of this could be the reactive feelings one has in response to a person of another culture being discriminated against, or feelings of solidarity in response to a person's differing cultural perspective. As this involves spontaneous instances of emotional contagion, it could be considered the most instinctual process.

2.2.4 Communicative

In the ethnocultural empathy model, the communicative process consists of asking questions about and demonstrating an understanding of another person's cultural perspective (Gerstner & Pastor, 2011, p 4-5; Wang et al. 2003, p 222).

This is comprised of expressing "ethnocultural empathic thoughts (intellectual empathy) and feelings (empathic emotions) toward members of . . . different [cultures]" (Wang et al. 2003, p 222). This process focuses on the intercultural communication aspect of ethnocultural empathy and results in the explicit discussion of culturally based views and emotions.

2.2.5 The Scale of Ethnocultural Empathy: S.E.E.

A 31-item scale, the SEE was developed as a way to quantifiably measure the type of empathy that is expressed towards those of differing ethnocultural backgrounds (Wang et al. 2003, p 222). While developing this scale, Wang et al. (2003) composed an additional four factor sub-scale. This four factor solution provided a more comprehensible model along with a consistently stronger structure. They acknowledged that while these factors are considerably connected, each one still embodies a distinct aspect (Wang et al. 2003, p 224). The factors are termed as follows: *Empathic Feeling and Expression, Empathic Perspective Taking, Acceptance of Cultural Differences,* and *Empathic Awareness.*

Empathic Feeling and Expression

The items in this factor examine an individual's emotional response to the feelings and/or experiences of people of other cultures. These items are also based on the emotions one feels while observing another's experience of racial prejudice or discrimination (Albiero & Matricardi, 2013, p 649; Wang et al. 2003, p 224).

Empathic Perspective Taking

These items study an individual's attempt to understand another's feelings and/or experiences by taking on their cultural viewpoint of the world (Albiero & Matricardi, 2013, p 649; Wang et al. 2003, p 224). The essential aspect of this factor is perspective taking, specifically *ethnocultural perspective taking*.

Acceptance of Cultural Differences

This factor evaluates the understanding and acceptance of another person's traditional cultural customs (Albiero & Matricardi, 2013, p 649; Wang et al. 2003, p 224). Prosocial traits such as respect and cultural sensitivity play an important role here, along with a certain level of open-mindedness.

Empathic Awareness

Finally, the items within this factor center around an individual's awareness or knowledge of another's cultural experiences. This includes the recognition of the various social or institutional discriminations faced by people of other ethnic backgrounds (Albiero & Matricardi, 2013, p 649; Wang et al. 2003, p 224).

> *Note: Wang et al. (2003) found that those with greater diversity within their family and/or social backgrounds correlated with notably higher levels of ethnocultural empathy. Their findings also support the idea that empathy within intercultural groups associates strongly with the understanding of cultural differences* (Wang et al. 2003, p 231).

As one of the first instruments to empirically measure empathy in cross-cultural settings, the SEE does contain a number of limitations. For instance, a number of variables may significantly influence ethnocultural empathy e.g., age, race, education, and even motivation. Wang et al. (2003) also acknowledged that although their analysis resulted in a four-factor model, in the future a better, broader model of ethnocultural empathy (outside the three domains) may be developed. Finally, they concluded with their assertion of ethnocultural empathy's importance within the field of psychology and hoped that their work will inspire further research (Wang et al. 2003, p 231-232).

2.2.6 Conclusion

Besides the ones already discussed, in psychology literature a number of other instruments for measuring cultural empathy exist, e.g., the broadly used *Multicultural Personality Questionnaire* by Van Oudenhoven and Van der Zee (2002). This includes theories on terms such as *emotional stability*, *flexibility,* and *open-mindedness* (Van Oudenhoven & Van der Zee, 2002, p 680-681). This scale, in addition to a number of other pre-existing surveys and indexes, was heavily referenced during the creation of the SEE (Wang et al. 2003, p 223). Therefore, in developing an ethnocultural empathy analytical model for this thesis, the SEE was chosen as a primary source. It should be noted that this model was based fundamentally on the theoretical concepts that *make up* the SEE and does not make use of the questionnaire itself. For this reason, the SEE functions solely as a theoretical foundation for the formal game analysis presented in Chapter 4.

Finally, a question that must be considered is, how do these theories of empathy and culture relate to game design? The next chapter will examine this further in the game design component of this literature review. The aim will be to investigate game design theories and methodologies through the perspective of ethnocultural empathy (e-empathy). Methods of empathic collaborative design and development with Indigenous communities will also be explored.

Chapter 3. Ethnocultural Empathy and Game Design

Introduction

Chapter 3 will continue with the game design component of this literature review. As such, this chapter will first provide a general overview of game design theory and then examine specific game design elements through an ethnocultural/empathic perspective (e-empathy). The final section of this chapter will also examine methods for empathic collaborative game design and development with Indigenous communities. Thus, the main aim of this chapter is to provide additional theoretical structure for the formal game analysis presented in Chapter 4.

It should be noted that the current data on ethnocultural/empathic game design is still quite limited because most existing research focuses solely on the empathic aspect, not on the ethnocultural. As a result, Wang et al.'s (2003) theory of e-empathy will be applied to most of the literature referenced later on in this chapter.

This chapter is structured as follows: Section 3.1 *Game Design*, will feature a short summary of current game research theories. Section 3.2 *Empathic Game Design*, will break down various design methodologies currently used in game studies through the lens of e-empathy. Based on the referenced literature, this section will specifically look at elements of game design that have the potential to elicit empathy (and e-empathy). This will include mechanics, characters, environments, and immersive narratives. Finally, section 3.3 *Co-development with Indigenous Communities*, will examine proposed methods of collaborative game development with people of Indigenous background. This will also include contemporary theories of intercultural sensitivity in relation to game production.

3.1 Game Design — a short summary

What is a game? Costikyan (2002) defines a *game* as "an interactive structure of endogenous meaning that requires players to struggle toward a goal" (Costikyan, 2002, p 24). To fully understand his meaning, this sentence must be broken down as follows. By *interactive structure*, Costikyan indicates that a game is a system (or series of systems) whose state can be influenced or changed by a player. *Endogenous meaning* refers to the fact that the game's "real-world value exists only in the context of the game" (Costikyan, 2002, p 22). For instance, points or in-game currency essentially have no meaning outside of the game system.

Costikyan refers to *struggle* as the balance of difficulty within a game structure. For example when a game is too hard it usually elicits frustration, and in contrast, when it is too easy, players can become bored. This careful balance of difficultly increases both a player's motivation for and emotional connection to a game (Costikyan, 2002, p 16). The root of this idea is essentially Csikszentmihalyi's (1990) *Flow Theory*, which in sum, identifies the crucial balance between an individual's skill level and the amount of challenge provided by a task (Sweetser & Wyeth, 2005 p 3).

Finally, when Costikyan uses the term *goal*, he refers to the established victory conditions of a game. Although not all games possess a specific end-state winning condition (e.g., *SimCity*), they must still provide players with some sort of objective (Costikyan, 2002, p 12). Therefore, an interesting game must provide goals, internal meanings, structure, and struggle. So, now that this section has defined what a game *is*, it can begin to investigate what a game is comprised *of*.

Unfortunately, in game design studies, there is no real consensus on the elements that make up a game. For example, in their MDA framework, Hunicke, LeBlanc, and Zubek (2004) proposed the terms *mechanics, dynamics* and *aesthetics* as a design methodology for game design and game research (Hunicke, LeBlanc, & Zubek, 2004, p 18). Järvinen (2008a) instead theorized that games are composed of nine elements. These include *mechanics, rule set, environment, theme, information, interface, components, players,* and *contexts* (Järvinen, 2008a, p 342). Schell (2008), on the other hand, further proposed his own compositional model of games. His four basic elements include *mechanics, story, aesthetics,* and *technology* (Schell, 2008, p 41-42).

Because the use of terms with such varying definitions can be quite confusing, in this thesis a more simplified model for empathic game design was used. The selected design elements include *mechanics*, *characters*, *environments*, and *immersive narratives*. These particular game elements were chosen for their observed ability by game researchers to generate empathy within a player. Thus, section 3.2 will continue with an examination of these elements through the perspective of ethnocultural empathy (e-empathy).

3.2 Empathic Game Design

3.2.1 Overview

What is empathic game design? Recently a growing number of game researchers have become interested in the study of games that foster empathy. This is perfectly understandable as games provide players with a unique opportunity to immerse themselves within the role of another person (Belman & Flanagan, 2010, p 5). Undoubtedly, forms of empathy can easily be observed within a number of game elements, including mechanics, characters, environments, and narratives. In fact, the simple act of *playing*, in lieu of observing, can result in a stronger bond of empathy between a player and a game (Flanagan & Nissenbaum, 2014, p 136-137). Typically it is empathy that inspires a player's emotional investment in, and identification with a game's characters, worlds, and their resulting narratives (Qin, Patrick Rau, & Salvendy, 2009, p 116).

The study of empathic game design is particularly exciting because often the empathy elicited from a game can inspire players to further explore new perspectives on issues present in today's world (Järvinen, 2008b, p 106-107). In fact, there are a number of existing games that foster empathy through carefully crafted simulations and experiences. For example, the games *Darfur is Dying* (2006), *PeaceMaker* (2007), and *Papers, Please* (2013) are just to name a few. Because they are more serious and educational, these games typically address specific moral and humanitarian issues prevalent in today's world (Bogost, 2011, p 18; Kors, Ferri, Van Der Spek, Ketel, Schouten, 2016, p 93). Naturally, Boltz et al. (2015) concluded that these games have the potential to spark "complex discussions" on "empathy, ethics, politics, social issues, and more" (Boltz et al. 2015, p 6).

Although some critics fear that the overexposure to digital simulations will result in de-sensitization of our emotional capacity, others believe games possess an incredible potential for effectively developing player empathy. This stems from games special ability to provide designers a popular interactive medium with which to experiment (Bachen, Hernández-Ramos & Raphael, 2012, p 440). As such, within a game's design, empathy can work as a "facilitating component" with the potential to directly influence a player's visceral gameplay experience (Kors et al. 2016, p 92).

Unfortunately, within contemporary game design studies, most researchers have focused primarily on intellectual empathy and often don't consider empathic emotions as a game design characteristic. Belman and Flanagan (2010), however, concluded that it is the "intertwining" of these two elements that can inspire higher levels of empathy within a player (Belman & Flanagan, 2010, p 12, 14). They proposed *empathetic play* as a type of gameplay where players intentionally use both cognitive and emotional empathy "to infer the thoughts and feelings of people or groups represented in the game . . . [and to] prepare themselves for an emotional response . . . by looking for similarities between themselves and [game] characters" (Belman & Flanagan, 2010, p 10). They concluded that game designers should take into account "the possibility that cognitive empathy may not, in and of itself," function properly unless emotional empathy is also present in some form (Belman & Flanagan, 2010, p 8).

As primary empathic theory coincides so closely with e-empathy, the methods for designing empathic gameplay can thus be easily adjusted to fit within the model of e-empathy. Remember the main components of empathy in section 2.1, *intellectual empathy* and *empathic emotions*, were both adapted to fit the e-empathy model (i.e., intellectual, empathic emotions, and communicative). Therefore, this study of empathic game design will continue to explore e-empathy design methods in section 3.2.2 *Mechanics*.

3.2.2 Mechanics

In the context of game design, the term *mechanics* is widely used by a number of game theorists, each with their own varying definition. With e-empathic game design in mind, however, this section will specifically use the term as it is defined by Schell (2008) and Järvinen (2008a).

Within Schell's (2008) model of game design elements, mechanics are defined as the goals, actions, and rules of a game (Schell, 2008, p 41). This element of game design is the fundamental core of a game, i.e., the "interactions and relationships" that make up a game's essential gameplay (Schell, 2008, p 130).

Järvinen (2008a), on the other hand, specifies mechanics as *only* the actions a player can take to interact with the game itself. Here mechanics are better understood as verbs or the abilities players possess within a game system. Some examples could include moving, jumping, climbing, collecting, swimming and/or trading (Järvinen, 2008a, p 255, 263).

For simplification, this thesis will lean more towards the definition of mechanics proposed by Schell rather than Järvinen. However, a player's actions will continue to be viewed as verbs, and Järvinen's (2008) term *core mechanic* will also be used, essentially to describe the specific game actions a player repeats over and over again (Järvinen, 2008a, p 255). Therefore, this section will study e-empathic mechanics as the *rules, goals* and *"methods for agency within the game world"* (Sicart, 2008, p 5).

Within a game's design, the *rules* are considered "the most fundamental mechanic" (Schell, 2008, p 144). They lay the foundation for a game's structure by defining "the space, the objects, the actions, the consequences of the actions, the constraints on the actions, and the goals" (Schell, 2008, p 144). As stated in section 3.1, *goals*, on the other hand, provide the player motivation to overcome various obstacles in the pursuit of a "satisfying resolution" (Costikyan, 2002, p 15). As a matter of fact, one of the most intriguing features of a game is its observed ability to foster empathy through its "goal driven nature" (Kors et al. 2016, p 92). This empathy is primarily cultivated by a player's direct ability to change a game's state through their choices and resulting actions.

In the context of empathic game design, goals are not only used to incite a player's emotional desires but can also "guide them in understanding the significance of their

actions" within a real-world setting (Qin, Patrick Rau, & Salvendy, 2009, p 111). In fact, Belman and Flanagan (2010) proposed that empathic game designers should observe how a game's mechanics or "actions can [directly] address the issues represented in the game" (Belman & Flanagan, 2010, p 10). They continued by encouraging developers to design game mechanics which will promote empathic behavior in players. For example, they write that a suicide prevention game could "require players to notice symptoms of suicidal ideation in non-player characters (NPC's)" (Belman & Flanagan, 2010, p 10). This could include recognizing "true-to-life" facial patterns or more metaphorical representations e.g., sad rain clouds or shrinking health bars (Belman & Flanagan, 2010, p 10). These mechanics could be designed as cognitive (e.g., puzzles or knowledge-based progression) or affective (e.g., death 'lose' conditions or fast-paced action), or communicative (e.g., co-operative gameplay) or even a combination of the three.

Other researchers suggest the use of "full-body movement mechanics" when designing games for empathy (Tong, Ulas, Jin, Gromala, & Shaw, 2017, p 3). These mechanics directly mirror a player's movements to that of their in-game character. For example, when a player swings their arm in a slashing motion, their player character directly matches that movement. Tong et al. (2017) found that this form of "body-mind connection" was a useful way to encourage cognitive perspective taking in players. They wrote that "because the avatar moves in concert with the player, some players reported they felt they were immersed in or were embodying" their game characters (Tong et al. 2017, p 3). Overall, these mechanics use *parallel empathy* to invite a player to both emotionally and intellectually feel like they are "in the shoes of" another person (Tong et al. 2017, p 3). It should be noted that this mental connection between a player and a character is not limited to full-body mechanics or first-person perspectives. In fact, simply the *agency* that game mechanics provide can foster a deep sense of empathy within players.

These types of "unconventional mechanics" can also be used to depict cultural perspectives that are uncommon in games (Dubbelman, 2016, p 47). Raybourn (1997) suggested that properly designed game mechanics can enable players to "build a knowledge base of intercultural communication skills" (Raybourn, 1997, p 144). A game's mechanics and puzzle design can also be used to teach specific cultural lessons (Underberg & Zorn, 2013, p 77). Indeed, game mechanics can specifically be designed to demonstrate the "deep . . . cultural values" of Indigenous peoples (Emery & Habel, 2017, p 18). For example, the specific design

of co-operative game mechanics can "symbolize the importance of balanced roles and responsibilities in Indigenous communities to achieve success" (Lagace, 2018, p 31). And as video games "have the potential to enable us to share and learn from each other," these culturally embedded mechanics have a great capacity to "validate and [spread] important cultural values and social realities" (Emery & Habel, 2017, p 19).

The rules, goals, and core-mechanics within a game's design not only enable the embodiment of "specific cultural models," but also "form a basis for action" within the gaming community and the rest of the world (Emery & Habel, 2017, p 20). LaPensée (2014) suggested that these games for social change should be designed with "game mechanics that promote ethical actions in the real world" (LaPensée, 2014, p 23). These games should not only be emotionally engaging but also provide players an opportunity to learn about other cultures "in an experiential manner" (LaPensée, 2014, p 23).

LaPensée (2014) goes on to point out the failings of previous designers, specifically when applying Indigenous content to a game's design. She concluded that by adapting "Indigenous content to existing game mechanics . . . [developers miss] the opportunity to imagine and bring to life uniquely Indigenous game design" (LaPensée, 2014, p 18). E-empathic games should instead explore innovative mechanics driven from the cultural perspectives of the Indigenous people they represent. This could include "recovering or revisiting language [and] traditional stories [;] . . . taking care of [one's self] and others; and taking direct action for [one's] own wellbeing and consequently the wellbeing of the community" (LaPensée, 2014, p 27). Thus, e-empathic mechanics should not be simply *applied* to Indigenous cultural content, but should instead be *derived* from it.

Well-designed e-empathic mechanics not only provide immersive cultural experiences but can also greatly empower the communities they represent. Through the use of both intellectual empathy and empathic emotions, these mechanics possess a considerable potential to elicit e-empathy in players.

In summary, the goals, rules, and actions within a game can be designed to address real-world issues, utilize cognitive and affective perspective taking, and communicate various cultural lessons and perspectives. The actual implementation of e-empathy game mechanics, however, will be studied further in Chapter 4, *E-Empathic Game Projects: Case Studies*.

3.2.3 Characters

Schell (2008) writes that the player character or *avatar* is the "player's gateway into the world of the game" (Schell, 2008, p 314). It is usually through this avatar that a player's in-game agency manifests. As a result of this, players can easily form strong connections between themselves and their avatars. This intrinsic instance of empathy between a player and a player character (PC) is one of the most obvious to observe within a game's design. For example, players "often wince in imagined pain upon seeing their avatar suffer a blow, or sigh in relief upon seeing their avatar escape physical harm" (Schell, 2008, p 312). And although a game character is primarily used as a tool to interact with a game's system, players can still experience empathy for characters "at the same time as [viewing] them as manipulable game pieces" (Smethurst & Craps, 2015, p 278).

Accordingly, PCs or non-player characters (NPCs) can be intentionally designed by developers to promote player empathy. To illustrate, in the game *ICO*, the NPC Yorda's timid behavior was used as a way to illustrate her "fragile and weak" nature. The more the player interacted with her, the more protective they would feel towards her (shown by Figure 6). In fact, everything including her "appearance, voice, movement, etc. [were all carefully] designed to elicit these feelings" (Järvinen, 2008b, p 98). In addition to a character's design, a character's interactions, dialogues and cutscenes can all be intentionally designed to stimulate cognitive and emotional empathy within players. These game design elements work by persuading a "player to try to understand the motivations [and emotions] of [a game's] characters" (Smethurst & Craps, 2015, p 284). In particular, interactions within cutscenes may be used to build character depth, while serious or comedic dialogues can emphasize character personalities.

Although many game developers might assume that only anthropomorphic characters have the ability to inspire empathy, in actuality, stylized characters, animals, objects or even "geometrical shapes" all have the capacity to be empathized with by players (Morrison & Ziemke, 2005, p 77). This is because humans possess the unique ability to attribute human characteristics onto pretty much anything. Furthermore, while many games use first-person perspectives as a straightforward way to generate empathic perspective taking, third-person perspectives in games can also invoke the same degree of empathy (Morrison & Ziemke, 2005, p 74). This is because players often use role-playing as a way to empathize with characters. For example, when players are discussing gameplay (from either perspective),

they usually say things like "*I* did this" or "*I* can't believe *I* died again!" (Bachen, Hernández-Ramos, & Raphael, 2012, p 451). Here, the usage of the first-person pronoun indicates that, no matter the perspective, a player will regularly project their sense of self onto the identity of their game character.

A number of researchers have found that people respond "to game characters in a similar way to the way that they react to real people." Additionally, the affective responses players have toward game characters are usually intrinsic in nature and *"occur without or with limited conscious awareness"* (Lankoski, 2010, p 98). Fundamentally a player's empathic engagement with a character lies in their ability to use *empathic perspective taking*. As Bogost (2011) states, "one of the unique properties of video games is their ability to put us in someone else's shoes" (Bogost, 2011, p 18). Thus, at its core, perspective taking (cognitive or affective) is one of the key foundations for a player's understanding of and identification with a game's characters.

However, a player's ability to identify with game characters can vary depending on the events depicted within the game, the functionality of its technology, or the player's overall level of motivation (Bachen, Hernández-Ramos, & Raphael, 2012, p 441). When a game level is loading or there are issues with buttons or physics, players often feel less immersed and, as a result, less empathic. Likewise, inconsistent character designs or overly clichéd uses of dialogue can easily wrench a player out of a game's fantasy and the player character perspective. Regardless of this, game researchers have found "that identification with characters in an interactive environment was associated with greater empathy" (Bachen, Hernández-Ramos, & Raphael, 2012, p 450-451).

This "bond of empathy" between a player and a game's characters can take many forms including *reactive empathy*, i.e., a player's emotional reaction to a character's perspective, or *parallel empathy*, i.e., the mirroring emotions felt by a player in union with their avatar (Flanagan & Nissenbaum, 2014, p 40, 44). For example, a player may feel frustrated or saddened by a character's struggles, or alternatively, a scared character may elicit matching feelings of fear. Games also have the interesting ability to foster empathy between players, PCs, and NPCs. In *ICO* for instance, the reinforcement of the player's PC and NPC "characters' dependence on and kindness towards each other at save states and in game scenarios" assisted in forming an empathic connection between them (Flanagan &

Nissenbaum, 2014, p 31). Here, role-taking and co-operative game mechanics were mainly used to facilitate this instance of character empathy (see Figure 6).

Affective emotions can also play a large part in the amount of empathy a player feels towards a game character. In fact, the more emotionally invested a player is in a character, the more emotional will their responses be while playing. These empathic emotions can likewise be used by game developers to introduce players to new issues or perspectives. One of the easiest ways to do this is by inspiring players to assume the *goals* of their avatar. Through this "sharing of goals," a player can much more easily immerse themselves within the perspectives of their character. For example, when a character's goal is in jeopardy, the player will often feel fear, and when a character succeeds, the player will concurrently feel victorious (Lankoski, 2007, p 8).

In the context of e-empathy, games also provide excellent opportunities for *cultural perspective taking* by allowing the player to take on the role of someone from another culture. Namely, this "exposure to another's perspective" cannot only encourage new understandings, but can also begin to impart unique cultural emotions and values to players (Katsarov, Seidenberg, & Christen, 2016, p 9). Furthermore, it has been observed that when a player attempts to take on another cultural point of view, they begin to demonstrate higher levels of intercultural sensitivity "and reduced stereotyping" (Bachen, Hernández-Ramos, & Raphael, 2012, p 441). And through e-empathy with game avatars and NPCs, players can further be compelled to examine the difficult issues and realities faced by other cultures (Boltz et al. 2015, p 6). On the other hand, a player's sense of empathy and identification with a character of another culture can also be hindered by inadequate intercultural experience or knowledge. In this case, researchers recommend that game designers use extra *out-of-game* materials to inform players about a culture's history and background, e.g., explanatory text or video interviews within a game's menus (Bachen, Hernández-Ramos, Raphael, & Waldron, 2016, p 441).

Games can provide a fertile space for Indigenous communities to accurately explore their own cultural identities (Lagace, 2018, p 63). When representing Indigenous cultures and characters in games, however, developers should always give the final say to the Indigenous communities. By doing so, game designers will find it much easier to avoid unfortunate cultural appropriations or stereotypes in Indigenous character design (Emery & Habel, 2017, p 18). In fact, when designing e-empathic games, the *authentic* design of a game's characters,

clothing, dialogues etc., must all be considered paramount. Moreover, well designed game characters should also be used to confront the tropes commonly found in aboriginal media clichés, i.e., the hyper-sexualization of Indigenous women (Lagace, 2018, p 65). By addressing these issues, game characters can provide Indigenous communities with an empowering self-representation to take back and reestablish their own cultural identity.

In short, game characters provide developers with excellent opportunities to foster e-empathy in players. By intentionally designing empathic characters, players can be encouraged to use both cognitive and affective perspective taking skills, for example, by connecting player and game character goals. Additionally, PC and NPC character designs, dialogues and cutscene interactions all have the potential to elicit emotional responses in players. This is achieved primarily through player identification with the game's characters, i.e., role-playing and anthropomorphizing. E-empathic gameplay can also be achieved through cultural perspective taking, supplementary cultural information, and by addressing difficult cultural issues. Finally, games provide a unique space for Indigenous communities to explore their own cultural identities and confront reoccurring media stereotypes. The spaces or *worlds* these game characters may interact within will be examined in the next section, *Environments*.

3.2.4 Environments

The first thing that may come to mind when thinking of a game's environment is a game's *world*. Although partially accurate, this doesn't completely cover the entire concept. Järvinen (2008a) defined *environments* as the space for play within a game system, e.g., mazes, levels and worlds. Essentially, his environments are the 2D/3D physical or virtual spaces provided by a game's structure (Järvinen, 2008a, p 344). In addition to Järvinen's definition of environments, this section will also incorporate Schell's (2008) design element, *aesthetics*. Schell (2008) defines aesthetics as the overall look or tone of a game, in this case the *sensations* within a game, i.e., "how [a] game looks, sounds, smells, tastes, and feels" (Schell, 2008, p 42). In other words, it is the general atmosphere created from the visuals, sounds and spaces within a game. Therefore, when this thesis discusses the term *environments*, it refers to both a game's setting and it's resulting aesthetics.

Within a game's environmental design, it is *empathy* that primarily encourages a player to "mentally [enter] into the imaginary game world" (Qin, Patrick Rau, & Salvendy, 2009, p 118). For instance, when players become emotionally invested in a game, they begin to feel a

connection to its world. The less empathy players have, however, the less immersion they will feel (Brown & Cairns, 2004 cited in Qin, Patrick Rau, & Salvendy, 2009, p 118). This form of cognitive and affective perspective taking stems primarily from a player's level of engagement with a game's system (Smethurst & Craps, 2015, p 274-275).

Kors et al. (2016) suggested that when designing empathy in games, emotional reactions can be stimulated by "taking away players' agency of bodily freedom" (Kors et al. 2016, p 99). This could be achieved by restraint to a player's sense of physical space or even "biofeedback during gameplay" i.e., a player's heartbeat or breathing patterns used to affect the game's mood (Kors et al. 2016, p 99). They also urged designers to allow "moments of reflection," where players cannot "do anything else [but] experience" the game's atmosphere. These empathic moments give the player a chance to breathe and genuinely observe the environmental aesthetics of the game (Kors et al. 2016, p 100).

The sounds, visuals, and moods of a game also have excellent potential to elicit affective responses in players (Bachen, Hernández-Ramos, & Raphael, 2012, p 442). For example, dark, confining spaces with ominous music and scary sound effects can usually incite intimidation or fear in a player. Alternatively, fast-paced beats and bright graphics can be empowering, while quiet, peaceful environments can promote a sense of calm. Indeed, when well designed, a game's environment (and aesthetics) can be especially effective in stimulating emotional responses (see Figure 4). This is because, of the three components of e-empathy, *empathic emotions* is the most likely to arise from a game's atmosphere.

In 2016, Bachen, Hernández-Ramos, Raphael and Waldron (2016) studied immersive experiences within game environments and found that they work particularly well to encourage player empathy with that of another culture. This "psychological immersion in [a] game environment" was especially effective through the use of actual "video footage" of the cultural events presented in the game (Bachen, Hernández-Ramos, Raphael & Waldron, 2016, p 83). As a game's environment is often used as a space for exploration, it can motivate a significant amount of discovery in a player. One-way e-empathic design can capitalize on this is to embed a game's cultural context within a game's environment and aesthetics, consequently allowing players to discover a specific culture while "exploring the game world." For instance, NPC's clothing can be designed to "denote the cultural and historical time period . . . or [a game's setting can] have hidden pieces of advice or extra information to support the goals of the game" (Muravevskaia, Tavassoli, & Gardner-McCune, 2016, p 702).

Specific points in a game's environment can also be used to explore a culture's distinct geographic locations (Underberg & Zorn, 2013, p 79). For example, Wyeld et al.'s (2007) project, *Digital Songlines*, developed "a virtual landscape of oral histories and mythological stories based upon the eternal sense of land and spirituality understood by the Aboriginal people" (Wyeld et al. 2007, p 262). In the creation of this "virtual landscape" the project team respectfully collected various visual and audio resources from the communities' local landscapes e.g., samples of local materials, bird noises, grasses, and photographic materials (Figure 3). Their aim was to support Australian Indigenous communities in the creation of "their own virtual cultural landscapes through storytelling in a 3D gaming environment" (Wyeld et al. 2007, p 262, 264). As the accuracy of the game's cultural environment and assets was paramount, the team ensured this by extensively collaborating with the Indigenous communities themselves (Wyeld et al. 2007, p 264).

Figure 3. *Screenshot from Digital Songlines.*

Figure 4. *Journey — an emotional game atmosphere*

Nonetheless, a game's cultural environment does not necessarily always have to be a realistic one. In fact, it can be intentionally designed as a cultural "vignette" which is "often used to [only] inspire empathy." This "stage-setting" vignette not only provides a game with "a sense of . . . time and place" but also "[depicts] an experience or environment, roughly, softly, and subtly" (Bogost, 2011, p 22-23). For example, "stylized" graphics and imagery can be used, unrealistically, to portray a sense of ambience based on a specific culture (Bogost, 2011, p 22). Of course, even when creating a cultural vignette, people from the original culture must still be respectfully consulted.

Through the use of empathic design, game environments have great potential in "[capturing] the spirituality, significance, cultural importance and heritage values of Indigenous people" (Wyeld et al. 2007, p 262). For Indigenous communities, video game environments can not only represent their cultures more accurately, but can also "ensure

their culture, history, and traditions will be passed on to their own youth" (Lagace, 2018, p 62-63). Ultimately, these game settings provide Indigenous communities with an interactive space in which to explore their own cultural identities and share them with the rest of the world (Lagace, 2018, p 88). Without doubt, through an environment's careful design and exploration, "indigenous and non-indigenous people alike . . . can understand the significance and cultural heritage of these areas" (Wyeld et al. 2007, p 262).

Through empathic game design, developers can make use of intellectual, emotional and communicative aspects to foster empathy within their game environments. This can be achieved by embedding cultural information within a game's setting (intellectual), eliciting e-empathic emotions from a game's atmosphere (emotional), or using actual audio and visuals from a specific culture (communicative). Certainly the empathic connection between a player and a game is due, to a large extent, to their level of immersion within a game's world. Thus, Chapter 3 will continue with the exploration of storytelling and immersion in the next section, *Immersive Narratives*.

3.2.5 Immersive Narratives

Schell (2008) defines the narrative or *story* within a game as "the sequence of events that unfolds [within a] game." He adds that these storytelling events can progress in either linear or emergent ways (Schell, 2008, p 41-42). Fundamentally, a game's storytelling can provide both context and emotional enhancement to gameplay, as "a good game is a machine that generates stories when people play it" (Schell, 2008, p 262, 266). In fact, one of the most interesting characteristics of a game's narrative lies in its *interactivity*. Sometimes referred to as *interactive storytelling*, these narratives include both the stories players create as they play (i.e., emergent narrative) and the original plots written by the game developers (i.e., embedded narrative) (Qin, Patrick Rau, Salvendy, 2009, p 110). Thus, while playing, players not only take on the role of a specific character but also directly influence and change a game's story (Qin, Patrick Rau, Salvendy, 2009, p 111). Yet at its most basic level, the main purpose of a game's narrative is to generate meaningful connections with its players (Muravevskaia, Tavassoli, & Gardner-McCune, 2016, p 702).

In well-designed games, the narrative should always support and be supported by a game's other design elements i.e., the mechanics, characters, and environments. For instance, a game's mechanics can be used to influence a player's understanding of "the significance of

their actions within [a game's] narrative" (Qin, Patrick Rau, Salvendy, 2009, p 111). And although game narratives are commonly used as framing devices or "backgrounds" for game mechanics, they also possess great capacity for providing deeply immersive experiences (Qin, Patrick Rau, Salvendy, 2009, p 116).

This form of "imaginative immersion" is a prime catalyst for a player's captivation with a game's narratives, environments, and characters which, in turn, allows them "to use [their] imagination, empathize with characters or just enjoy the fantasy of the game" (Ermi & Mäyrä, 2005, p 45). This sense of immersion essentially enables a player to "feel that they are part of the [game's] story" (Sweetser & Johnson 2004 cited in Qin, Patrick Rau, Salvendy, 2009, p 118). In addition to this, players can also use "imaginative immersion" to creatively fill in the gaps of a game's story by imagining their own narratives (Muravevskaia, Tavassoli, & Gardner-McCune, 2016, p 704). And as this type of immersion is considerably affective in nature, it also usually results in emotional reactions from players.

A commonly used component within a game's design is *narrative game mechanics*. Although referred to as a type of *mechanic*, because of their special narrative aspects, these devices will nonetheless be covered in this section. Narrative mechanics not only include a game's various "cutscenes, scripts and dialogues" but also, its "procedural devices", i.e., rules, goals, and mechanics (Dubbelman, 2016, p 41). In a game's design, narrative game mechanics can be utilized by inviting players to "perform actions that support" the fictional stories and worlds they are simultaneously creating and exploring. In conjunction with other narrative devices, i.e., PC/NPC commentary or dialogues, environmental storytelling, cutscenes, voice-over narration etc., narrative mechanics can also be used to explore moral dilemmas, build dramatic tension, and evoke high levels of empathy in players (Dubbelman, 2016, p 43, 49).

Dubbelman (2016) suggests that existing core mechanics such as moving, throwing or attacking can be repurposed to create new and interesting story events in games. For example, during a scene in *The Last of Us: Left Behind*, (Figure 5) the context of the main zombie shooting mechanic used throughout the rest of the game is changed to that of a water pistol fight. As a clever adaptation of one of the game's core mechanics, this narrative device encourages "the player [to] perform actions in support of characterization and empathy building" (Dubbelman, 2016, p 47). Dubbelman (2016) concluded that through the

Figure 5. *The Last of Us: Left Behind — Characterization.*

Figure 6. *ICO — Ico and Yorda.*

use of narrative game mechanics, developers need only "to change the context in order to create the desired narrative effects" (Dubbelman, 2016, p 47).

Since the first oral stories, humans have consistently used storytelling to explore and develop various forms of empathy (Skaraas, 2018, p 1). Indeed, at its heart, storytelling often relies upon the cognitive, affective, and communicative aspects of empathy. In games, one of the most common results of narrative storytelling and its subsequent role-playing is a heightened sense of emotional attachment in a player. In fact, some researchers have concluded that the combination of narrative storytelling and role-playing not only produces closer player-avatar connection, but also provides essential aid for empathic perspective taking during gameplay (Tong, Ulas, Jin, Gromala, & Shaw, 2017, p 4).

An interesting suggestion for fostering e-empathy in games is the direct linking of fail conditions with that of a player's understanding of a game's story. In terms of empathic theory, here a player must use intellectual empathy when interacting with this specific narrative mechanic. In this case, they must apply active listening and retention skills in order to succeed. Additionally, through their actions, a player must also communicate their understanding back to the game's system i.e., by employing the *communicative* element of e-empathy. Consequently, this regularly sparks a higher sense of curiosity and concentration towards game narratives (Qin, Patrick Rau, Salvendy, 2009, p 116).

Many pre-existing games have adapted cultural folktales into interactive game narratives. Generally, these games have used "the narrative structure" of a cultural story to form a basis for the game's overall "story outline" (Underberg & Zorn, 2013, p 74). In this case, plot points within a game's cultural story are tied to specific environments and levels as the game progresses. These active (on-line) moments of gameplay are usually separated by non-

active (off-line) cutscenes and NPC interactions (Smethurst & Craps, 2015, p 273). Other games have instead applied narrative game mechanics and/or environmental storytelling to explore these new cultural perspectives. Either way, games provide an excellent space to interactively explore traditional cultural stories. In fact, they are particularly well suited to share the "tribal stories, traditions, and languages" of Indigenous peoples (Wyeld et al. 2007, p 266).

Since 2006, the *Aboriginal Territories in Cyberspace* or AbteC, have used their *Skins* projects to discuss "ethical Aboriginal storytelling techniques" within video games. At their core, these workshops provide an opportunity for "Indigenous youths to create, program, and produce video games that tell the traditional stories of their communities" (Lagace, 2018, p 16, 31). These cultural game narratives have also been used to address the various media stereotypes often appropriated from Indigenous cultures. Indeed, projects like *Skins* are providing Indigenous communities with an excellent chance to negate the "harmful tropes" often found in commercial video games (Lagace, 2018, p 32, 60-61). Likewise, to some degree, the immersive experiences that traditional "songs, stories and ceremonies" provide can be experienced similarly in games (Lagace, 2018, p 20). And although there is trepidation from some elders to share narratives with outside audiences, Indigenous communities have nonetheless become increasingly interested in using games "to create positive Indigenous representations" (Lagace, 2018, p 62-63).

Within numerous Indigenous cultures, *oral storytelling* is seen as an important method for passing down cultural traditions, stories and values. In fact, through the empathic nature of storytelling, Indigenous storytellers often play a vital role in connecting the people within their communities. Games, consequently, may highlight these oral traditions by implementing audio voice-over narration in original Indigenous languages. In all cases without exception, the cultural stories explored in games must always be provided by "credible storytellers and elders" (LaPensée, 2014, p 26). This is not only respectful, but is also highly ethical, since the voices of Indigenous people have been concealed for centuries (LaPensée, 2014, p 26). Also, because each tribe and nation is different, the stories of their communities should each be given "the time and respect" that they individually deserve. As such, e-empathic game narratives must avoid hurtful generalizations of Indigenous stories or experiences (Dillon, 2007, p 236).

To summarize, the imaginative immersion that game narratives provide can utilize e-empathy in emotional, intellectual, and/or communicative forms. The cutscenes, dialogues, scripted moments, etc., within a game's story may all be used to elicit emotional empathic responses and/or teach traditional cultural lessons. Narrative game mechanics can be used to highlight specific story elements and encourage characterization and empathy within a game's narrative. Also, when the goals of a game are tied to a player's understanding of its cultural story, it results in the use of intellectual and communicative e-empathy elements. Finally, games can provide a unique space for Indigenous people to share their cultural stories. And as storytelling is considered highly important within their communities, cultural game narratives should respectfully be used to connect Indigenous peoples with each other and the rest of the world, ultimately allowing them the opportunity to address the various issues and stereotypes that surround their communities.

3.3 Co-development with Indigenous Communities

3.3.1 Overview

One of the best ways to create e-empathic video games is to intentionally develop them *with* individuals of an Indigenous culture. The most important aspect of this collaborative process is to respectfully obtain permission from the specific Indigenous communities. Furthermore, the represented Indigenous community should "be actively seeking" or interested in sharing their traditional stories or customs. Storytellers or elder consultants should, themselves, have proper authority within their own communities. For example, sometimes certain sacred stories or traditions "cannot be shared without those with access having gone through a [certain] initiation process" (Wyeld et al. 2007, p 263). Likewise, both the ownership and copyright of any stories used within a game should be held by the story owner i.e., storyteller or community council (Wyeld et al. 2007, p 267).

In co-development, the consultation, or even full-on collaboration with Indigenous community members, should be employed during every step of a game's production (Emery & Habel, 2017, p 16). Indigenous community members should be present for all game design decisions and should be among the first to test and provide gameplay feedback. As stated in earlier sections, this will help insure that all cultural semiotics, stories, music, visuals etc., within a game's final design are respectfully and "faithfully

reproduced" (Wyeld et al. 2007, p 263). In fact, even before creating game visuals, game developers should attempt to incorporate any traditional artworks, music, or art styles from actual Indigenous artists (Wyeld et al. 2007, p 264). Additionally, cultural stories should be provided by the traditional owner or storyteller, hopefully in the original language, and should not be changed unless approved by that person (Wyeld et al. 2007, p 267).

Genuine collaborative and inclusive development is a largely unexplored avenue of commercial game production, which is unfortunate because games have the real ability to provide a space for deep connection between Indigenous and non-indigenous peoples (Emery & Habel, 2017, p 19). Proper co-development in game production can also create new opportunities of representation for Indigenous game developers within the commercial game industry. This more inclusive and diverse space also has the potential to confront hurtful conceptions of Indigenous image or self worth, such as the "view that somehow indigenous peoples 'cannot do this kind of non-indigenous hi-tech work'" (Wyeld et al. 2007, p 266). In fact, many game elements such as audio, graphics, and storytelling can "engage multiple community members, from elders to youth" within a game's development (Lagace, 2018, p 31). Also, in the context of commercial games, the communities involved in a game's production should always either receive royalties or be "paid industry standard rates" (Wyeld et al. 2007, p 267).

Because the representations of Indigenous cultures have often been appropriated or "exoticised" in commercial games, respectful co-development is of crucial importance for addressing these distressing media stereotypes (Emery & Habel, 2017, p 17). Co-development can empower Indigenous communities by offering them a platform to pass on and share their own cultural wisdom and traditions. At the same time, inclusive game production should also take into account that not all Indigenous communities are the same. For proper co-creation, developers should always make sure to approach the correct Indigenous community and avoid common tropes or generalizations (Dillon, 2007, p 236). As Emery and Habel (2017) write, "there is clearly an urgent need for this kind of co-creation in video games which represent Indigenous peoples and cultures" (Emery & Habel, 2017, p 18).

3.3.2 Intercultural Sensitivity and Game Production

In order to respectfully co-develop games with Indigenous communities, game developers should always, to some degree, possess a certain level of intercultural sensitivity. This raises the questions, what is intercultural sensitivity, and how can one be interculturally sensitive?

Affective in nature, *intercultural sensitivity* is an individual's "emotional desire . . . to acknowledge, appreciate, and accept cultural differences" (Fritz, Möllenberg, & Chen, 2001, p 167). And although intercultural sensitivity is fairly comparable to Wang et al.'s (2003) affective component of e-empathy, *empathic emotions*, while discussing co-development it is still highly beneficial to take a closer look at this particular theory.

Defined by Chen and Starosta (1997), intercultural sensitivity is one of the "three conceptual dimensions of [their] intercultural communication" model, a psychological concept they designed to measure an individual's capacity "to develop a positive attitude towards a foreign culture" (Fritz, Möllenberg, & Chen, 2001, p 165). Within this model, Chen and Starosta (1997) proposed that in order for an individual "to be interculturally sensitive" they must have "six affective elements," *open-mindedness, interaction involvement, self-monitoring, self-esteem, non-judgement* and *empathy* (Chen & Starosta, 2000, p 5). Note: as affective empathy is already covered within e-empathy's *empathic emotions*, in this section the element *empathy* will not be revisited.

Open-Mindedness

This element is comprised of an individual's "willingness to recognize, accept, and appreciate different views and ideas." To be truly open-minded, a person must be able to openly express their own ideas while also actively listening to those of another person (Chen, 1997, p 7).

Interaction Involvement

The second element indicates an individual's overall level of "responsiveness, perceptiveness, and attentiveness." In other words, a person's ability to interact within an intercultural context by attentively listening and appropriately waiting for their turn to speak (Chen, 1997, p 7-8).

Self-Monitoring

Self-monitoring focuses on a person's ability to regulate their own behavior within interculturally social situations. Ultimately, this means an individual's capacity to "detect [specific] situational cues" and respond appropriately "to fit the situation" (Chen, 1997, p 6).

Self-Esteem

Self-esteem means a person's "sense of self-value or self-worth." Not to be confused with arrogance, personal self-esteem can be important in fostering emotionally positive "intercultural interactions" (Chen, 1997, p 6).

Non-Judgement

This final element is the "attitude that allows [sincere listening] during intercultural communication." To be nonjudgmental, one must actively avoid "rash judgements" and wholeheartedly enjoy exploring another person's "cultural differences" (Chen, 1997, p 8).

For game developers to be truly inclusive in co-development and production, they must possess, to a certain extent, all of these elements of intercultural sensitivity. Because of the incredibly complicated nature of game production, one of the most crucial requirements for a successful development team is the ability to effectively communicate and collaborate. Without clear, concise group communication and teamwork, the chaotic nature of game production tends to overwhelm and result in subpar or unfinished games. Additionally, sensitive attitudes are especially significant when co-developing cultural games because the results could not only be poorly designed games, but also games that could be harmful to the Indigenous culture (Lagace, 2018, p 60). In fact, when working with Indigenous communities, it is highly recommended that game development teams employ some form of intercultural sensitivity training. This would not only increase positive instances of group collaboration but would also provide a more respectful and inclusive space for Indigenous consultants and developers.

3.3.3 Conclusion

Sensitively incorporating Indigenous culture and stories into games can be a complex process. Nonetheless, when done properly, genuine collaborative game development with Indigenous communities can be an incredible experience for both developers and Indigenous community members alike (Lagace, 2018, p 87). Cooperative design and

development of cultural games is also a great opportunity for e-empathy, due in part to the fact that when communicating and working together, game development teams must *already* employ various methods of empathy. It seems remarkably straightforward, therefore, that the next logical step is to expand these methods to include ethnocultural empathy.

Ultimately, to be successful, e-empathy game developers must employ intercultural sensitivity by being open-minded to the views and ideas of Indigenous team members and consultants. They must practice active self-monitoring and non-judgment when collaborating with Indigenous elders, storytellers, and community members. And they must possess a certain level of self-esteem that allows them to put their egos aside while interacting respectfully and appropriately within Indigenous communities.

Games have great potential to influence and improve the world we live in. Indeed, co-developing and producing games with Indigenous cultures is just one example of how games can be used to make our world a better place (Emery & Habel, 2017, p 20). Collaborative Indigenous game projects like *Skins*, *Digital Songlines*, and *SimPä* (a game-based project which shares and strengthens Māori culture), already demonstrate the positive impacts of collaborative game development (Lagace, 2018, p 70; Mann et al. 2006, p 165).

Games also can provide Indigenous people with an effective means of self-representation. Most recently, the increasing availability of free game development tools and engines are providing more inclusive opportunities for Indigenous people to enter the gaming industry themselves (Machkovech, 2015). As Owisokon Lahache from the *Skins* project said, "We're in the digital age, and we need to create our own things" (Delamont, 2017).

Although most pre-existing projects have primarily been tested within educational settings, inclusive development can certainly be applied to commercial game production. In fact, with limitations, even AAA game titles (i.e., *Prey*, or *Assassin's Creed III)* have used some degree of consultation in production (Emery & Habel, 2017, p 18). Still, within the commercial game industry, genuine co-development is considered quite a rare phenomenon. Nonetheless, examples of both commercially successful and more serious, educational co-developed Indigenous game projects will be studied more closely in Chapter 4, *E-Empathic Game Projects: Case Studies*.

Chapter 4. E-Empathic Game Projects: Case Studies

Introduction

Although they represent a recently growing genre of indie game design, e-empathic games are still considered a rare phenomenon within the video game industry. During the research of this thesis, however, two currently published commercial games met the criteria for e-empathy and collaborative development. This chapter will consequently contain a case study of these video games in addition to a reflection on a culturally based game jam experience. These games and the game jam experience were chosen because of their distinct approaches to Indigenous cultural expression and e-empathic game design.

The two games to be reviewed are *Never Alone (Kisima Ingitchuna)* and *Mulaka*. Published by Upper One Games in 2014, Never Alone was developed in collaboration with the Iñupiat, the Indigenous people of northern Alaska (E-Line Media, 2016). In turn, *Mulaka*, which was released in February 2018 by Lienzo, was created with anthropologists and leaders of the northern Mexican Tarahumara culture (Mulaka, 2018). Because they are games developed with the cultures they represent, *Never Alone* and *Mulaka* both represent cases for collaborative and e-empathic game design.

The final section of this chapter will include a reflection on the 2018 *Sámi Game Jam* experience. The first *Sámi Game Jam* in Utsjoki, Finland was held from the 20th to the 26th of February. This was a *Finnish Game Jam* development event where both game developers and members from the Sámi culture came together to create small games based on Sámi life (Sami Game Jam, n.d.). Overall, this chapter aims to analyze the methods implemented by each of these vehicles in relation to ethnocultural empathy and inclusive Indigenous game development.

4.1 Method: An Analytical Model for E-Empathy

4.1.1 Overview

Based on the theoretical research formed in Chapters 2 and 3, two formal theoretical models for the analysis of e-empathic Indigenous game design and collaboration were devised. Before the three game case studies can be presented, this section will introduce a short summation of each model. The models were created as follows:

First, each component of e-empathy, *intellectual, empathic emotions* and *communicative*, was subdivided into the four game elements *mechanics, characters, environments,* and *immersive narratives*. Second, a question (or two), based on the combined theories of e-empathy and game design in Chapters 2 and 3, was composed for each game element. Finally, this theoretical model was then employed to the formal analysis of the games *Never Alone* and *Mulaka*.

For the purpose of respectful co-development with Indigenous communities, an additional model was developed. Conceived from the literature compiled in Chapter 3, a number of questions for authentic collaborative development were composed. This smaller theoretical model was then additionally used to formally analyze the co-design and game production methods used in the case studies, *Never Alone, Mulaka*, and the *Sami Game Jam*. Thus, based on the theoretical foundation provided by Chapters 2 and 3, this thesis proposes these models as potential tools for game developers to use before and/or during the co-creation of e-empathic games with Indigenous communities. Note: for a more complete view of these models, refer to Appendix A: *Ethnocultural Empathy Analytical Model* and Appendix B: *Intercultural Sensitivity Model*.

4.1.2 E-Empathy Model

As stated earlier, this theoretical model was primarily composed based on the theories studied in Chapters 2 and 3. From this research, an analytical model was proposed, which is composed of three sections, *Intellectual, Empathic Emotions,* and *Communicative*. Each section is then subdivided into the elements of game design that were shown from research to most likely elicit e-empathy in players. The theoretical model is presented here, broken down into the three e-empathic components for clarity.

Intellectual

Ethnocultural Empathy Analysis Model		
Component of E-Empathy	Game Elements	Questions for Analysis
Intellectual Empathy (cognitive)	Mechanics	Do any mechanics communicate cultural lessons or perspectives?
		Are tasks or puzzles designed around understanding cultural perspectives, lore, or traditions?
	Characters	Is the player asked to identify with the PCs/ NPCs? Cultural perspective taking?
	Environments	Is cultural information embedded in game environments? (clothing, music, symbolism, etc.)
	Immersive Narratives	Does the narrative encourage players to understand and/ or accept cultural stories or lessons?

Table 1. Ethnocultural Empathy Analysis Model — *Intellectual Component*

This portion of the e-empathy analysis model focuses on the intellectual or *cognitive* component of e-empathy (see Table 1.). For this reason, all the questions focused on the mental aspects of e-empathy, such as cultural knowledge or lessons, perspective taking, and identification.

Empathic Emotions

Ethnocultural Empathy Analysis Model		
Component of E-Empathy	Game Elements	Questions for Analysis
Empathic Emotions (affective)	Mechanics	Are there culturally based mechanics that elicit emotional responses? ('death', action, etc.)
	Characters	Are there instances where players feel parallel or reactive emotions towards PCs or NPCs? (identification or role-playing)
		Are any characters intentionally designed to inspire empathic emotions?
	Environments	What atmospheric elements (visuals, music, mood) are used to invoke e-empathic emotions?
	Immersive Narratives	Are there narrative moments (dialogue, narrative mechanics, cut-scenes) that encourage emotional responses?

Table 2. Ethnocultural Empathy Analysis Model — *Empathic Emotions Component*

Based on the affective or *emotional* component of e-empathic theory, this section of the theoretical model was developed to examine empathic emotions potentially elicited by a game's design. This includes questions relating to a player's emotional responses, *parallel* or *reactive,* to culturally based game elements (see Table 2.).

Communicative

Ethnocultural Empathy Analysis Model		
Component of E-Empathy	Game Elements	Questions for Analysis
Communicative (cognitive + affective)	Mechanics	Are there culturally derived game mechanics? (i.e., co-operative)
	Characters	Does the game confront any issues or stereotypes that people of this culture may face?
		Is supplementary "out-of-game" cultural information provided?
	Environments	Does the game implement real locations, audio and/or visuals from the culture? Is it a cultural 'vignette'?
	Immersive Narratives	Is the player asked to communicate narrative understanding back to the game system?
		Are traditional cultural stories shared respectfully?

Table 3. Ethnocultural Empathy Analysis Model — *Communicative Component*

The final section of the Ethnocultural Empathy Analysis Model was based on the *communicative* component of e-empathy. Both affective and cognitive, the questions proposed for this section involve the respectful communication aspects of e-empathy such as co-operation, providing cultural information, and addressing cultural issues or stereotypes (see Table 3.).

4.1.3 Co-Development Model

Finally, an additional, smaller theoretical model was developed to examine methods for proper e-empathic and collaborative development with Indigenous communities. Derived from the theories and literature reviewed in Chapter 3, questions within this proposed model address various aspects of intercultural game production and co-development. An example of some of this model's questions will be provided here. However, for a more comprehensive view of this model, readers can refer to Appendix B: *Intercultural Sensitivity Model*. A few of these questions include:

> *Is the Indigenous community interested in sharing their cultural stories or traditions?*
>
> *Were Indigenous community members involved in all stages of game design and production?*
>
> *Does the game avoid generalizations and accurately represent the Indigenous culture and community?*
>
> *Did the developers provide an inclusive and respectful space for Indigenous team members?*

In summary, these two theoretical models were created and intended to be used as a foundation for this chapter's formal analysis of three case studies. Both are based on and reference the theoretical literature and research in earlier chapters. Finally, this thesis proposes that future game developers and researchers can potentially use these two models as tools to review e-empathic elements of their games and to explore methods of collaboration with Indigenous communities in game productions.

4.2 *Never Alone (Kisima Ingitchuna)*

4.2.1 Overview

Never Alone, or *Kisima Ingitchuna*, is a classic 3D puzzle-platformer video game released in 2014, based on the retelling of a traditional Iñupiat tale. The *Iñupiat*, or *Iñupiaq*, are the Indigenous people of south-central Alaska, residing beside the Bering Sea across the Alaskan Norton Sound. In *Never Alone*, the player protagonists consist of Nuna, a young Iñupiat girl, and her arctic fox companion. The game contains eight chapters in which the player (or players) must employ cooperative gameplay methods to solve various platforming puzzles. The mechanics were intentionally designed with interdependence in mind as cooperation is a crucial component of native Alaskan culture and life (E-Line Media, 2016).

Comprised of several interconnected villages, the Iñupiat world is steeped in cultural traditions, folklore, values, and spirituality. Because the Iñupiat live within the harsh natural environment of the Arctic, communal themes dominate, such as mutual survival, sharing vital resources, and reciprocity (Williams, 2018, p 6). For centuries, the Iñupiat have dwelled together in this land, sharing the common livelihoods of fishing, hunting, and gathering. At the heart of their culture is the belief that the "collective [is not] above the individual" (Williams, 2018, p 8). In other words, the individual cannot survive "without the help of the collective" (Williams, 2018, p 8). As in many Indigenous communities around the world, oral storytelling is considered an important and sacred art within the Iñupiat community. Essential cultural knowledge and values are passed down from generation to generation through cherished traditional stories and folklore. These narratives are often filled with necessary advice, metaphors, and lessons on surviving the extreme Arctic environment (Williams, 2018, p 7).

The Iñupiat people place a great deal of value on their strong connection to nature and their homeland. For this reason, the growing threat of climate change is presently one of the most pressing issues to their society, and they worry that potentially-irreversible environmental damage is directly threatening their ancestral home (Williams, 2018, p 8). Regrettably, outside threats to the Iñupiat culture and way of life are not new phenomena. Their people have already faced a long history of forced assimilation and the loss of cultural identity at the hands of outside governmental bodies and colonizers (Williams, 2018, p 9). In fact, the terrible traumas of past persecutions played a key role in the Iñupiat's motivation to create

Never Alone. Essentially this game was not only intended to be a celebration of their cultural traditions and beliefs, but also a direct reclamation of cultural sovereignty and identity (Williams, 2018, p 11).

Time has proven that the main intentions of *Never Alone*, to highlight, share and preserve beloved Indigenous cultural values and folklore, have indeed been realized. By 2015, one year after its global release, *Never Alone* had already "reached nearly 3 million players," who were experiencing the story of Nuna and fox in 15 different languages (Never Alone Blog, 2016). Since then, it has gone on to win numerous awards and receive critical international acclaim. Besides its initial publication across multiple platforms, i.e., computer and gaming consoles, the game was eventually made available for touch-screen tablets and cell phones. In addition, in 2015, an expansion to the game was released, *Never Alone: Foxtales* (Never Alone Blog, 2016). Note: for the purpose of this thesis, an analysis of the *Foxtales* game expansion was not included.

4.2.2 Mechanics and Characters

What follows is a formal analysis of the e-empathic game design and co-development methods of *Never Alone*. This analysis was completed through observations from video game playthroughs, online video walkthroughs, and research literature. The game elements, *mechanics*, *characters*, *environments*, and *immersive narratives* were specifically studied. Finally, an evaluation of the game's overall collaborative and e-empathic nature was conducted using the two theoretical models found in section 4.1. A summary of these observations will follow. Note: access a complete view of this analysis in Appendix C: *Never Alone Game Elements*, and Appendix D: *E-Empathy Analysis — Never Alone*.

Mechanics

With regards to gameplay, the mechanics employed by *Never Alone* combine elements of Alaskan culture with classical gameplay styles. In either single or cooperative player modes, puzzle solutions require interdependent collaboration between the co-protagonists' individual character mechanics. Each player-character is designed to possess specific abilities, which results in the emergence of strategic, collaborative gameplay. For instance, while the fox character possesses a higher jump capacity, Nuna has the ability to push boxes and unlock areas with her *Iñupiat bola*, a traditional throwing weapon constructed from a rope and weighted stones. Throughout gameplay, these simple yet specific mechanics were

used to ultimately formulate a rich empathic interconnection between the player(s) and the game's player-characters (Upper One Games & E-Line Media, 2014).

As mentioned previously, the interdependence mechanic of the characters encourages the player to form a symbiotic relationship with the fox character. For example, when both characters are trapped by the threatening polar bear, the fox's ability to jump quickly becomes essential in distracting and eventually defeating the bear. This co-operative gameplay style also builds an *emotional* connection between the player(s) and the player-characters. Approximately halfway through the gameplay, Nuna's fox companion is unexpectedly killed, arousing intense feelings of sadness and grief in the player. It can be argued that from the clever combination of well-developed co-op mechanics and emotional character identification, intellectual and emotional empathy were heightened within the player (Upper One Games & E-Line Media, 2014).

The tasks, goals, and puzzles within the game deliberately call attention to cultural perspectives, traditions and lore, with co-operative puzzles embedded with information derived directly from the Iñupiat culture. In fact, the entire game system is designed to encourage Indigenous values such as "generosity, gratitude and reciprocity" (LaPensée, 2017). Overall, the mechanics of *Never Alone* were intended to teach important lessons about Indigenous Alaskan life, both to members of the Iñupiat community and non-members alike, especially the three chosen values of "resilience, intergenerational exchange, and interdependence" (Roberts, 2015). As lead game designer Grant Roberts wrote, the use of local cooperative gameplay (within the Indigenous community) was a way for the developers to "reinforce the theme of interdependence through playing side-by-side with another person" (Roberts, 2015).

Characters

In collaboration with the Indigenous community, all of the character designs within *Never Alone* were directly "inspired by traditional Alaska Native art – painting, drawing, sculpture, clothing, masks, scrimshaw" (Our Team, 2016). This authentic depiction of the player-characters (PCs) and non-player-characters (NPCs) was used to instill cultural perspective-taking as well as to directly confront stereotypical Indigenous representations commonly found in the media. For instance, the use of a young, female protagonist was a very deliberate choice made by the developers (Figure 9). As female characters in the media are often depicted as helpless or sexualized, the developers wanted to combat this stereotype by

creating "a strong, resourceful, smart, brave character who could be a great role model for girls" (Never Alone Blog, 2016). Additionally, this decision reflected the Iñupiat world-view of gender equality, as "the gender of the characters is much less important than the wisdom and learning contained in the story" (Never Alone Blog, 2016).

The co-operative character mechanic also encourages the player to intellectually and emotionally identify with the two protagonists. Cutscenes and character interactions within the game are used for strong parallel and reactive e-empathy effects. For instance, whenever either PC dies, be it by falling through the ice or being swiped by a polar bear, the other character gasps and cries. Their resolve to try again and again after repeated "deaths," caused by the difficult puzzle-platforming nature, demonstrates the characters' resilience and loyalty. And, again, during the climatic moment of the game when one of the enemies kills the fox, Nuna shows strong emotions when she weeps before respectfully burying and then praying over her lost companion. In this way, the game's "emotional bond between Nuna and her fox/spirit friend is never abandoned" (Gaertner, 2016).

Other NPCs provide additional cultural information, such as the Owl Man, who symbolizes the important role elders play within the Iñupiat community (see Figure 8). In fact, Nuna "must perform an act of kindness and respect" for this elder by returning a sacred cultural object, a drum, in order to gain a new ability, i.e., her *bola* (Roberts, 2015). Additionally, all of the enemies and bosses within the game were designed from creatures and animals prevalent within Iñupiat folklore. Interactions with these characters were often intense and emotionally stressful. It was during these moments that I found myself feeling the most character identification and e-empathy, growing angry when killed and ecstatic when I succeeded. Overall, through respectful means, the developers were able to create charming, affectionate player-characters, designed to be great examples of emotional and intellectual e-empathy.

Figure 7. *Scrimshaw Cutscene.*

Figure 8. *Never Alone: Owl Man, Fox and Nuna.*

4.2.3 Environments and Immersive Narratives

Environments

The design of the environment of *Never Alone* makes use of many characteristics of e-empathy. Along with embedded "cultural insights," Indigenous cultural information is introduced by the careful design of traditional clothing, enemies, spirits and Iñupiat symbolism. Natural elements from the harsh physical environment of Alaskan life are also incorporated into fail conditions and gameplay difficulty. These elements include blizzard winds, frozen water, and enemy polar bears. Indeed, all aspects of the game design are based on the native Alaskan culture. For example, arctic owls are not only symbolic for cultural wisdom but, when asked about their importance to Iñupiaq culture, Alaskan Native artist Ron Brower said, "they are very important because they are delicious and we like to eat them" (Never Alone Blog, 2016).

Although referencing actual sounds, sights and locations from the Indigenous culture and homeland, the game acts more as a "cultural vignette" visually, as it is rendered in a "cartoonish" style. Still, atmospheric elements within the game promote e-empathic emotions in players. For instance, the low-visibility of the blizzard in combination with howling winds and dramatic music combine to instill fear of the Arctic's harsh environment (Roberts, 2015). In addition, all of the game's cutscenes highlight important historical aspects of the Indigenous culture by incorporating the traditional Iñupiat scrimshaw art-style (illustrated by Figure 7). The use of this imagery within the game not only accentuates a time-honored custom, but intellectually and emotionally "immerse[s] the player[s] within an Iñupiaq worldview" (Williams, 2018, p 35).

When commenting on the game's design, art director Dima Veryocka stated that he "felt passionately" about "[wanting] to create something with more personal meaning" (Never Alone Blog, 2016). In the end, in partnership with the game's cultural ambassadors, he wanted to express his own personal appreciation for Alaskan Native art by sensitively presenting a new visual style, "that was innovative and wonderful but still felt faithful to the original inspirations – the painting, sculpture, scrimshaw and crafts of the Iñupiat people" (Never Alone Blog, 2016).

Immersive Narratives

In conjunction with these well-designed mechanics, characters, and environments, the game's narrative structure is based upon the nuanced oral teachings of the Iñupiat worldview and Alaskan oral storytelling. From the beginning, all creative decisions were made to reflect the Iñupiat elder's storytelling traditions. One example of this is demonstrated by the use of voice-over narration by James Nagaek in the Iñupiat language (with English subtitles) (Never Alone Blog, 2016). Another example is the replacement of traditional platformer rewards, such as point collection or high scores, with collectible 'cultural insights'. These collectibles take the form of short documentary vignettes about the Iñupiat people. Supported by these *insights*, the personal stories of the tribes' elders, community members and storytellers are showcased. The insights stress the importance of contemporary issues that the Iñupiat community currently faces, i.e., global warming, loss of language, concerns about cultural preservation. Thus, the reward of the gameplay itself is to listen to and experience Iñupiat folklore and life, an excellent demonstration of the e-empathic design technique of using *out-of-game* cultural information to communicate both intellectual and emotional cultural perspective-taking in players (Upper One Games & E-Line Media, 2014).

The narrative of *Never Alone* was derived from the traditional "*Kunuuksaayuka*" tale, originally told by Robert Nasruk Cleveland and collected in the *Stories of the Black River People* (Never Alone Blog, 2016). The main plot, a journey to discover the source of a savage blizzard, explores the cultural world-view of the restoration of nature's balance. Other cultural stories were used as sources for the game's various puzzles and enemy designs. In this way, traditional folklore was used effectively to emphasize the cultural perspectives and values of the Iñupiat people, including the crucial themes of survival and communal dependence. Other elements within the game's narrative were designed to promote e-empathic emotional responses in players, examples of which include, the shocking moment the characters discover the destroyed village, when the fox "dies," and when the two companions say goodbye for the last time. About writing the game, Ishmael Hope said, "it is personally satisfying to me that we were able to elevate and celebrate one of the world's greatest storytellers ever" (Our Team, 2016). In conclusion, all of the traditional cultural stories shared within *Never Alone* were presented respectfully and adhered faithfully to their original cultural sources.

4.2.4 Co-development and Production

In 2012, the leaders of the Iñupiat community found themselves dealing with a "crisis of dislocation, depression, and high suicide rates" among their population's younger generation (Williams, 2018, p 14). They suspected this was happening because of several factors including economic poverty, lack of cultural identity in their youth, and feelings of powerlessness over Indigenous portrayal by the media. Gloria O'Neill, president and CEO of the *Cook Inlet Tribal Council* (CITC) thought that perhaps one way they could address these problems was by promoting their culture, both to the world and to their own people, through new forms of media and technology (Campbell, 2013).

As a representative of the CITC, O'Neill contacted Alan Gershenfeld, founder of the video game company *E-Line Media* and chairman of the non-profit group *Games for Change*. Having attended one of his inspirational talks, she approached him about potentially building a business that would both inspire the Iñupiat community's "young people and that could be commercially sustainable" (Campbell, 2013). The CITC decided that a video game about Indigenous Alaskan people "would have the broadest effect," as games possess a powerful capacity to share and celebrate cultures around the globe (Campbell, 2013; Roberts, 2015). Above all else, the Council hoped that the creation of a contemporary, culturally-inspired video game would instill a sense of reconnection to the community within their youth (Williams, 2018, p 14).

Conceived and initiated directly by the Indigenous community, *Never Alone* was produced in conjunction with *E-Line Media* and *Upper One Games*. Upper One Games was founded by the Cook Inlet Tribal Council and is the first indigenous-owned game developer in the United States (E-Line Media, 2016). After successfully producing a profitable game for the benefit of their community, the CITC has continued to collaborate with E-line Media, now owning 36% of the game developer company, with O'Neill serving as executive chair (Takahashi, 2015). *Never Alone* was also developed in partnership with writer Ishmael Hope, an Iñupiat and Tlingit storyteller, and E-line Creative Director Sean Vasce (Figure 10). Discussing the game's co-development, Hope said, "I told them that this project needed an equal collaboration with Native people, not only because it was ethically responsible, but to make a better video game. . . . I was astounded at how, at every level, there are genuine, good people, all with amazing talents, incredibly hard workers, and they are totally committed to shining a light on Iñupiaq people" (Never Alone Blog, 2016). Located in Seattle, Washington, Vasce and his

team worked personally with 40 native Alaskan storytellers, elders and community members, emphasizing the use of *inclusive development* throughout production,

> [We] spent many many hours with folks from the community - elders, storytellers, artists, youth - really asking questions, trying to understand their perspectives, their history, their values. . . . It's not like games in the past where we're working with licensed IP. This is a real culture, real people, a living culture, people that are moving forward. (Donlan, 2014)

What Vasce calls "inclusive development" is an excellent example of e-empathic collaborative game design. During production, members of the CITC, E-Line Media and community "cultural ambassadors" were present for all game decisions. The developers met regularly with "elders, youth, artists, storytellers, and historical advisors from the Iñupiaq, Tlingit, Yup'ik, [and] Tagish communities" (Roberts, 2015). In his postmortem on the game's development, lead game designer Grant Roberts wrote, "the most important objective . . . was to earn and sustain the trust of the Alaska Native community by articulating our role as students, not borrowers" (Roberts, 2015).

They demonstrated this careful sense of respect by making sure the entirety of the game's design was as accurate as possible and that it had been approved by the community. For instance, when the developers selected the story "*Kunuuksaayuka*" for the game's narrative, they first met with Minnie Grey, (see Figure 10) the original storyteller's "daughter and oldest living descendant," because in Iñupiat culture, it is the storyteller who has been telling the story the longest who "owns" the story (Roberts, 2015). Since Robert Nasruk Cleveland, the original story owner, had already passed away, the permission to adapt his story fell to Grey (Never Alone Blog, 2016). When asked if they could change the story's protagonist from a boy to a girl, Grey gave her blessing and continued to ensure throughout development that the most "important elements of the Kunuuksaayuka story remained intact" (Never Alone Blog, 2016).

The development team's collaborative experiences proved that, in order to guarantee proper cultural representation within a game's design, using intercultural sensitivity to patiently collaborate with members of the Indigenous community is crucial. As Vasce himself remarked, "you need to go in listening and viewing yourselves as students and hanging your egos at the door. Because you're coming into a culture that doesn't really care about your lineage or your career. You're there to learn" (Donlan, 2014).

In conclusion, the interactivity of video games has tremendous potential to generate a greater sense of empathy from those within and outside the community represented. When questioned about the representation of her own native culture through games, Amy Fredeen, CFO and executive vice president of the CITC remarked, "storytelling has been this really critical tool for Alaska Natives to pass on wisdom to the next generation, because before . . . it was all an oral tradition. . . . [The *Never Alone*] team brought that to life on screen and it was completely moving. These are our stories, delivered in a new way" (Donlan, 2014). This statement clearly summarizes the main motivation for the e-empathic, collaborative development of *Never Alone*, because in today's world, it is through the medium of video games that cultural narratives have the best chance of being shared authentically with a wider contemporary audience.

Figure 9. *Never Alone Nuna and Fox Cutscene.*

Figure 10. *Minnie Grey and Sean Vasce Co-designing.*

4.3 *Mulaka*

4.3.1 Overview

A 3D action-adventure video game, *Mulaka* was published in early 2018 by the Chihuahua, Mexican indie game development studio Lienzo. Co-founded by Edgar Serrano and Adolfo Rico, the small team aimed to create a video game that would highlight the ancient Indigenous culture of northern Mexico, the *Tarahumara* (Mulaka, 2018). Although in the beginning they struggled to find funding including a failed Kickstarter, eventually a proud investment from the community of Chihuahua itself provided Lienzo an opportunity to develop *Mulaka* (Cardenas, 2018).

Within the state of Chihuahua live the Tarahumara, or *Rarámuri* in their own language, an Indigenous people who have inhabited the rough and wild Sierra Tarahumara for centuries. Separate from others who also reside in Chihuahua, these Indigenous people possess their own traditional dress, language, and religion (Kennedy, 1963, p 620). The Sierra Tarahumara area consists mainly of rocky cliffs and deep chasms located within the Sierra Madre Occidental mountain range. Spread across these canyons, the Tarahumara live in small remote communities which are often only reachable after day-long journeys across steep and treacherous footpaths (Levi, 2013, p 163-164).

The skill and endurance needed for navigating these paths are highlighted by the Tarahumara's renowned foot racing ability (Levi, 2013, p 169). In fact, they are known to run barefoot or in handmade sandals, i.e., huaraches, for incredibly long distances at a time (Cardenas, 2018). Foot racing plays a very important social role within the Tarahumara culture by bringing remote members of their community together and forming deep cultural connections. Additionally, dancing is an important aspect of the Tarahumara culture and plays a significant part in their yearly rituals and traditional ceremonies, the primary themes of which are often nature's fertility, communal harmony, and celebration (Levi, 2013, p 169-170).

Today often considered a pacifist community, the Rarámuri people actually possess a centuries-long history of fighting for the preservation of their culture. In fact, the Rarámuri are considered "fierce warriors" who defended their lands from great enemies such as the Conchos, Apaches, and Spaniards (Joho, 2015). This fierce resiliency is particularly

demonstrated by the fast-paced action and combat elements implemented within the final game design of *Mulaka* (Joho, 2015).

Witchcraft and sorcery also play an important role in Tarahumara mythology and religion (Levi, 2013, p 170). *Mulaka* represents these traditional cultural characteristics through the design of the game's main character, Mulaka, a Sukurúame, or skilled Tarahumara warrior and shaman. As a powerful sorcerer, Mulaka must embark on a spiritual journey and ultimately fight against "the foulness corrupting the land, while drawing upon the powers of demigods" (Mulaka, 2018).

Although none of the Lienzo developers come from the Tarahumara culture directly, they are still all native to the Chihuahua area (Cardenas, 2018). In fact, one of the primary reasons why Lienzo chose to explore the Tarahumara is because they wanted to bring attention to an Indigenous community close to home. They also hoped to share Mexican culture and folklore without falling into the common tropes of "piñatas, . . . Dia de Muertos, and Cinco de Mayo" (Sanchez, 2018).

After conceiving of the initial idea, the developers reached out to major Tarahumara community members and anthropologists over the next two years. Because the Tarahumara do not possess a formal council of representatives, the Lienzo team had to travel and speak with as many Indigenous community members as possible (Kidwell, 2018). They wanted to make sure the game was developed accurately and with the utmost respect to the Rarámuri culture. Although hesitant at first, lead members of the Indigenous community eventually granted them permission to create the game. The first approval came from the Tarahumara cultural governess, Marcelina Mustillos. When discussing their collaboration, Serrano stated, "she was all for it because she does have that vision of 'whatever you can make to help us not be forgotten, then that's good'" (Kidwell, 2018).

During development, the Lienzo team also enlisted the help of cultural anthropologist and author, Enrique Servín. As a primary advisor, Servín helped the developers find and decode the various myths and "oral narratives thought long lost" from the Tarahumara culture (Cardenas, 2018, Chapter 1, Section 2, para. 9). In an interview on the matter, he said, "the people of Lienzo were very open to my suggestions so that myths could be as authentic as possible . . . I think it's beautiful because of that, it takes, you know, very old things and it turns it into quite new cultural products" (Lienzo Mx, 2017c). Thus, he provided essential insight for the accuracy of the game's overall cultural representation.

The final aim of *Mulaka* was to create a game not only for entertainment, but one that would help preserve the beautiful Indigenous traditions, mythology, and language of the Tarahumara community. Additionally, Lienzo also strived to address other environmental aspects of the Sierra Tarahumara which run "the risk of eradication," such as the now-extinct imperial woodpecker (Joho, 2017). Although Lienzo hoped to bring global attention to this impressive culture, they acknowledged that many throughout Mexico have very little knowledge of their own Indigenous communities. For this reason, their main ambition was to first correct the regrettable ignorance found within their own country of Mexico. As writer and programmer Guillermo Vizcaíno said, "We wanted to help change people's perspective by giving them a chance to experience these grandiose tales that define the Tarahumara. And, of course, bring their amazing views of the world to everyone around the globe" (Joho, 2017).

4.3.2 Mechanics and Characters

Continuing with a formal analysis of the e-empathic and co-development methods demonstrated within *Mulaka*'s final game design, this analysis was composed through direct game play-throughs and research literature. During and after playing the game, the game elements *mechanics, characters, environments*, and *immersive narratives* found within *Mulaka* were recorded. Then, the theoretical models in section 4.1 were used to evaluate the game's overall methods of collaborative development and e-empathic game design. This section will thus follow with a summary of these observations. Note: a more comprehensive picture of this analysis can be viewed in Appendix E: *Mulaka Game Elements* and Appendix F: *E-Empathy Analysis — Mulaka.*

Mechanics

One of the best properties of *Mulaka* is the game's integration of culturally inspired mechanics. In fact, almost all the mechanics that make up the game's final system reference, in some way, the rich Tarahumara culture. For example, the Tarahumara's renowned foot racing tradition is expressed in the PC's unlimited stamina. Throughout the game, the character Mulaka never "walks;" instead he possesses only running and sprinting abilities. This core game mechanic was intentionally designed, as developer Vizcaíno stated, "the Tarahumara are world-renowned for their amazing endurance and that's portrayed in the game by the means of running, you have unlimited stamina" (Lienzo Mx, 2017a).

In addition to this, other game mechanics were used to elicit cultural perspective-taking in players. Some of these include harvesting, crafting potions, spear fighting, *Sukurúame Vision* (or all-seeing eye) and "praying" save points.

Additionally, the "dancing to heal" action and the "three soul health bar" are particularly interesting e-empathy mechanics. Not only does the dancing spotlight the cultural ceremonies of the Tarahumara, but Mulaka was animated to actually perform a traditional "Tarahumara rain dance" (Cardenas, 2018, Chapter 5, para. 16). The "three soul health bar" is also an excellent example of the Tarahumara world-view as the Tarahumara believe that men possess three souls and women possess four. This mechanic was intentionally designed to elicit highly emotional responses in players. "We thought this would be cool gameplay-wise, because then we could have this creature ripping those souls away from you, taking some of your life," said art director Daniel Gutiérrez (Lienzo Mx, 2017b). Indeed, the "loss" of a soul is very dramatic, as the soul is literally torn from Mulaka's body. In contrast, once healed, it returns gently by peacefully floating down.

In Tarahumara culture, only a powerful Sukurúame can help recover a lost soul, which was incorporated into a number of the game's narrative quests (Joho, 2015). In fact, many typical characteristics of the selfless Sukurúame are present within the game's mechanics. When concept artist Adriano Ciavire spoke about the design of *Mulaka*'s *Sukurúame Vision* he said, "[it's] this special vision that sees the spiritual world, [and] a kind of phantom or spirit is seen" (Lienzo Mx, 2017b). Essentially, this mechanic grants the player an empathic ability to interact with, speak to, and restore spirits or "fallen stars."

On each level, players are frequently required to open doors by collecting three sacred artifacts. To gather these artifacts, Mulaka must complete various tasks ranging from destroying enemies to completing culturally-based quests. The game also incorporates simple water-based puzzles designed to enhance it's e-empathic intent. These puzzles encourage intellectual perspective-taking as players are required to learn the vital importance that water plays within Tarahumara culture and life. Also, through an easy "hit and align" mechanic, the solving of these puzzles allows players to restore the flow of life-giving water to NPC communities.

The use of in-game currency or "kórima" is also an effective demonstration of the selfless Tarahumara cultural perspective. The Tarahumara word for "share," this kórima mechanic comes from the Tarahumara language's lack of a word for ownership, as they believe

everything belongs to everyone (Cardenas, 2018). Throughout the game, Mulaka collects this "currency" by defeating enemies, exploring areas and completing small cultural quests, using this kórima to gain additional power-ups and abilities. Even the game's fast-paced action and combat sequences play a major role in heightening the player's emotions. Not only does this highlight the Tarahumara's warrior past, but it also encourages players to use empathic role-playing. For instance, when I was playing I often shouted in frustration when I was killed or felt satisfyingly empowered when using the "finishing move" ability.

The Tarahumara culture and mythology is also communicated through Mulaka's "spirit" shapeshifting ability (see Figure 12). An aspect of Sukurúame shamanism, each transformation represents a Tarahumara demigod, including Tata the bear, Ba'wísini the snake, Ra'wigá the puma, and E'láwi the imperial woodpecker (Cardenas, 2018; Joho, 2017). While emphasizing cultural stories and mythology, these abilities empower players with new ways to fight enemies and explore or "unlock" new areas.

Characters

Besides "becoming one" with the Tarahumara culture through the mechanics, cultural empathy is also enhanced by NPCs (non-playing characters). Throughout the game, NPCs often provide players with background information on the Tarahumara culture. For instance, towards the beginning of the game, the first NPC reminds Mulaka (and simultaneously, the player) of the four fundamental principles of Sukurúame philosophy, (1) "kindness to your brethren." (2) "Spiritual balance between this world and the ones above and below." (3) "Understanding that solutions must rely on non-violent means…" (4) "But, when there is no other way, you have to strike swiftly and fiercely" (Lienzo, 2018). Besides providing cultural information and background, the appearance of these simple characters incorporate traditional Tarahumara colors, symbolism, and clothing. Mulaka's character was specifically designed to wear ceremonial Indigenous dress, leather huaraches, and body-painted white dots. On the Sukurúame's design, animator Manuel Alderete commented, "He's a tricky character because he has to look dignified because he's a shaman, but also wild like a warrior" (Cardenas, 2018, Chapter 5, para. 16). Although stylized in a "cartoonish" way, the character designs and animations in *Mulaka* still encourage players to culturally empathize with them (see Figure 11).

Figure 11. *Mulaka Character Design.*

Figure 12. *Imperial Woodpecker 'Spirit' Form.*

Occasionally throughout the game, characters display emotional reactions to events in the game's narrative. Because of their simple, low-poly design, these emotions must be intentionally exaggerated through animation. When Mulaka is discouraged, he dramatically falls to his knees, and when other NPCs discover the death of their child, they cover their faces in grief. Some NPCs play music, dance, and share traditional Tarahumara games and/or customs. Besides eliciting cognitive and affective role-playing, these emotional displays invite players to feel moments of parallel or reactive empathy with the game's characters. In addition, interactions with NPCs communicate various cultural issues that the Tarahumara community face, e.g., fighting for their homeland. Though represented in metaphorical dialogue, these interactions allow players a chance to reflect on the problems faced by the actual Indigenous community.

In the Tarahumara culture, everything in nature has a soul. In the game, this is demonstrated by the thoughtful depiction of creatures from Tarahumara lore. These mythological creatures include the "soul-eating Rusíwari," bladed Seeló mantis men, and huge giants called Ganokos (illustrated in Figure 13) (Mulaka, 2018). Although designed as enemies, each creature is respectfully defined through extensive background information. Players access this information when they first encounter new creatures and from the enemy list provided in the game's menu. The cultural information not only gives players interesting insight into Tarahumara mythology but also provides strategic gameplay hints.

The Tarahumara's reverence for all natural life is also expressed through Mulaka's compassionate "healing" of the game's Ganokos. Based on the Tarahumara god Ganó, the game emphasizes that these creatures of stone and tree "are not good or evil" in nature, but

instead simply follow "their own code" and are thus acting unusually violent (Lienzo, 2018). Once freed from corruption, the god Ganó himself, with his "connection to the spirit world" plays an important advisory role for Mulaka as the game comes to an end (Lienzo, 2018).

4.3.3 Environments and Immersive Narratives

Environments

Throughout the production of *Mulaka*, the Liezno developers worked diligently to make as accurate a portrayal of the Tarahumara culture as possible, even in the final design of the game's environments and color palettes. For instance, the visuals of *Mulaka* are composed of stylized low-poly shapes and vibrant colors which correspond with the Tarahumara community's own use of bright colors in all of their traditional dress. Each level has a distinct color palette, which is lively and incredibly atmospheric (illustrated by Figure 14). And although the use of the low-poly art style is commonly assumed to be a result of the production budget, it was actually designed intentionally to represent the Tarahumara. As a cultural "vignette," the inspiration for this was drawn from the artistic wood carvings created by many in the Tarahumara communities. These carved objects or animals match the low-poly game style as they are also simple, polygonal, and bold in nature (Cardenas, 2018).

The environment of *Mulaka* is critical to the gameplay as most of the puzzles are expressed through environmental exploration. This immersive sense of discovery was intended to teach players more about the Indigenous culture. For example, in one level there is a specific wall painting that depicts the ancient lore of how the Tarahumara people came to be (Lienzo, 2018). In another example, the sounds and music used within the game came from the Sierra Tarahumara and Chihuahua area, much of the music composed with traditional instruments and taking inspiration from ceremonial melodies. Even the ambient sounds i.e., bird, wind, and rock noises, were recorded directly from the surrounding area (Cardenas, 2018). The atmosphere created by *Mulaka*'s dramatic music, natural sounds, and landscapes contributed much to the game's power of immersion. For example, when the music dropped to a quiet stillness before a ferocious boss battle, my heart would begin pounding in anticipation. And when entering the darkness of the underworld, I experienced a suspenseful tension that contrasted dramatically with the ease created by cheerful colors in previous levels.

The world map, environmental aspects, and levels within *Mulaka* were all based on real geographical locations within the Sierra Tarahumara. In an interview on the subject, Serrano emphasized that this was intentional on the part of the developers. He said, "the game of *Mulaka* is based on a lot of regions that are really important for the Tarahumara," and although globally renowned, areas like the Copper Canyon, the Basaseachic Waterfall, and the Desert of Samalayuca are not commonly known for their cultural connection to the Tarahumara (Lienzo Mx, 2017a). For this reason, Lienzo decided to design each game level as a way to communicate the important cultural significance of these environments to the Tarahumara people (Cardenas, 2018). Despite the fact that the visuals in Mulaka are stylized, these environments loyally reference the Sierra Tarahumara and, in the end, serve as a culturally rich background within which players can explore.

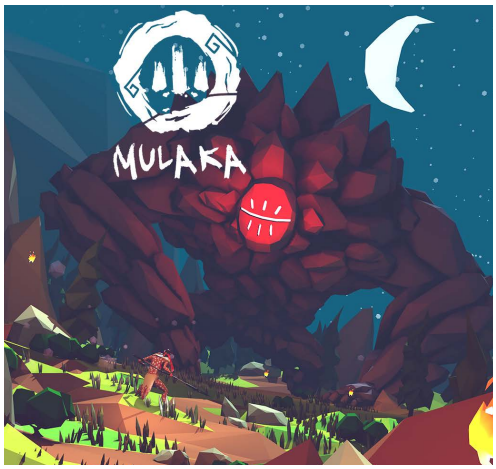

Figure 13. *Mulaka and Ganoko.*

Figure 14. *Mulaka Basaseachi Environment.*

Immersive Narratives

Finally, the immersive narratives told in *Mulaka* use e-empathic methods to share the rich cultural mythology and traditions of the Tarahumara. In fact, most of the elements that make up *Mulaka* are steeped in Tarahumara folklore and traditions, from the use of cultural "quotes" during loading screens to character dialogues and cutscenes. Furthermore, these narrative elements use cultural perspective-taking and empathic emotions to communicate the Indigenous community's world-view. As the Sukurúame protagonist, for example, players intellectually take on the role of one of the Indigenous community's most important spiritual leaders and guides. Because of his unique ability to communicate with both the gods and humanity, it is Mulaka, and ultimately the player, who must save the world by personifying the best of the Tarahumara community.

Unlike Christianity, in Tarahumara mythology "the gods above" do not place humanity within the center of creation. In their legends it is told that the earth has already been destroyed and recreated three times before (Joho, 2015). They believe that, as Serrano said, "if humanity is corrupt enough, then they will be wiped out," so within *Mulaka*, the role of the Sukurúame is to gain the favor of the five demigods and ultimately prove to the higher gods that the world "is worth saving" (Lienzo Mx, 2017c). Although at the end of the game players must battle against Terégori or "the embodiment of death," it was shocking when the higher gods revealed that humanities' corruption could not be overcome (Lienzo, 2018). Surprisingly, *Mulaka*'s final antagonist did not take the form of a specific villain but, instead, was represented solely as the "corruption of humanity" as seen in the Tarahumara world-view. The end cutscene was heart-wrenching when Mulaka had proven his people's worthiness but still couldn't save the world, a defeat not often found in standard power/fantasy game narratives. As expressed by the narrator in the final cutscene, "Mulaka's efforts have proven that humanity has courage. But sometimes it is wiser to simply start again" (Lienzo, 2018). This unorthodox narrative plot point was used provokingly to both cognitively and affectively represent the Tarahumara's unique perspective of the world.

The voice-over narration used within *Mulaka* by Indigenous community member Martín Makawi was respectfully presented in the original Tarahumara language. This e-empathic decision to demonstrate the Indigenous language within cutscenes and dialogue stemmed from the developers desire to preserve the Rarámuri folklore and language (Joho, 2017). Preservation is especially crucial because currently the Tarahumara are facing "a very serious loss of culture" as many of their youth no longer find themselves connected to their own culture's language, mythology, and legends (Kidwell, 2018). The developers hoped that the exciting and "cool" nature of video game storytelling would provide a compelling new medium for reigniting cultural awareness and conservation. As developer Adolfo Aguirre stated, "We believe games can be tools to change society for good, and [we] want to raise awareness of the beauty and colors of the Rarámuri culture through our game" (Joho, 2015).

4.2.4 Co-development and Production

When discussing their early collaboration with Tarahumara community members, Aguirre (the Lienzo community leader) referenced the communities' initial hesitation when he said, "though they were definitely doubtful at first, they're enjoying how our game treats their culture with the utmost respect. They're all for it now" (Joho, 2015). As stated earlier, throughout *Mulaka*'s production the Lienzo developers tried to involve the Tarahumara Indigenous community as much as possible. Anthropologist Enrique Servín played a key role by providing additional advice for the aspects of Tarahumara mythology and culture present in the final game. When working with community members, the developers emphasized the game's potential to disseminate the culture of the Tarahumara people to the world. Servín highlighted this point by saying, "so what the game does is to recognize or to pay homage to another culture. Indigenous Mexican cultures still have a lot of things to offer" (Lienzo Mx, 2017c). In a final gesture of cooperation, even though Lienzo retained the ownership and copyright of *Mulaka*, the producers made sure to pledge a significant portion of the game's profits for the preservation of the Tarahumara culture and community.

Naturally, the developers at Lienzo came across instances during production where they had to apply methods of intercultural sensitivity. For example, Edgar Serrano commented on one of the initial moments in the game where Mulaka was programmed to fight and kill a bear. This was unacceptable because, as Serrano commented, "the bear is a big demigod for them so they would never purposely harm a bear" (Kidwell, 2018). When they realized that this was considered inappropriate within Tarahumara culture, they wisely decided to take a step back and started listening much more closely to the Indigenous Tarahumara community.

In conclusion, although the developers at Lienzo were the first to approach the Indigenous Tarahumara community about making *Mulaka*, they still endeavored to create a commercial game that would be an accurate and respectful reflection of Chihuahua's Indigenous culture. When discussing this, co-founder Adolfo Rico proclaimed, "even though I didn't know about this mythology, it's still part of the city I live in and the state, and the country I live in. So I really feel proud that we can get to share this amazing culture with the world" (Lienzo Mx, 2017c). To their credit, the team at Lienzo successfully created a globally distributed game which is unique, fun, and an excellent model of authentic co-development with an Indigenous community.

4.4 *Sámi Game Jam Experience*

4.4.1 Overview

Chapter 4 will conclude with a review of the 2018 *Sámi Game Jam* and my personal reflections on the experience. Though the material within this section is primarily qualitative and reflective in nature, a number of academic and informal articles, websites, and video interviews were additionally referenced. This includes information gathered from the official *Sami Game Jam* website and a trailer for the short documentary *Reahpenráigi - Games from the Samiland* by Red Stage Entertainment.

In 2018, from February 20th to 26th, the first *Sámi Game Jam* was held at the Áilegas Centre, i.e., the Utsjoki community center and cinema, in the northernmost municipal province of Utsjoki, Finland. A five-day game development experience, it was coordinated by the *Finnish Game Jam* in conjunction with the municipality of Utsjoki (Sami Game Jam, n.d.). The jam was primarily organized and lead by Annakaisa Kultima, the president of the *Finnish Game Jam*, and Outi Laiti, project coordinator for the Utsjoki municipality (Red Stage Entertainment, 2018). During this game development event, approximately 40 jammers, including professional game developers and students, collaborated with people of Sámi background to create games based on Sámi culture and life (Sami Game Jam, n.d.). The game jam was supported by a number of Finnish institutions and companies, including the game studios *Veikkaus, Neogames, Ludocraft* and *Fingersoft* and the Finnish cultural foundation *Majaoja-säätiö* (Sami Game Jam, n.d.).

A number of the participants were invited to attend the event, while others applied in January. The resulting group of selected "jammers" stayed within the Utsjoki area and were compensated for the cost of their travels. The game jam was an intensive experience where the participants were organized into six teams, each creating small-game prototypes based on a set of "predefined themes" (Sami Game Jam, n.d.). The primary goal of the game jam was to inspire the game developers to "open new avenues into Sami culture and traditional storytelling" (Sami Game Jam, n.d.). The inclusive and communal nature of the event was especially highlighted, as the organizers hoped to "spark the gameful expression of Sami artists and increase knowledge about the Sami globally" (Sami Game Jam, n.d.). Finally, the six small games that were developed during this event were to be presented in an exhibition in 2019-2020. Supported by the *Finnish Museum of Games* and *Aalto University*, the exhibition

Sami in Play (preliminary name) is expected to be shared in exposition venues and museums throughout Finland (Sami Game Jam, n.d.).

Who are the Sámi people?

Arriving in northern Eurasia thousands of years ago, the *Sámi* are a Finno-Ugric people who live in an expansive region across northern Norway, Sweden, Finland, and the Russian Kola Peninsula. Within Finland, they are the only recognized Indigenous group. As a result, the preservation and revitalization of the Sámi cultural traditions and languages are considered paramount (Laiti & Frangou, 2019, p 7). Because of the harsh nature of the Arctic areas in which many Sámi live, a sense of community and interdependence is considered vital within their society. Additionally, Sámi people believe all useful knowledge should be shared equally within their communities, usually occurring when Sámi community members gather around a campfire, often within a large tent or *Laavu*, to share their knowledge and experiences (Laiti & Frangou, 2019, p 8, 11).

Members of the Sámi culture share a close connection with animals and nature, especially reindeers. They also nurture a tight relationship between themselves, their family, and the natural world. Collecting plants communally with family for "food and medicine" is a centuries-long tradition, as the Sámi view nature as a traditional space for learning and kinship (Hertting & Alerby, 2009, p 6-11).

The Sámi people face a number of issues regarding misrepresentation and discrimination which often involve cultural traditions such as salmon fishing and reindeer herding (Laiti & Frangou, 2019, p 14-15). This stems from the fact that many non-indigenous people throughout Scandinavia and the world know very little about Sámi language, culture, and life. For example, some would be surprised to learn that across *Sápmi* or *Sámiland*, where Sámi people live, there are numerous languages and dialects, many of which have become neglected or even systematically suppressed over the centuries (Peterson, 2003, p 295). The Sámi culture is "a living way of life," made of up real, *living* people (Peterson, 2003, p 300). For this reason, proper representation of the Sámi, especially by the media, is essential for the cultural preservation and well-being of their communities (Peterson, 2003, p 300).

What is a game jam?

Before I offer my personal reflection on the *Sámi Game Jam*, I must first describe what a game jam is. A game jam is an intense "game creation event" where participants publicly create and share games within "a relatively short time frame [by] exploring given design constraint(s)" (Kultima, 2015, p 9). These constraints usually involve a pre-determined theme decided by the jam organizers or participants. While some jams do possess aspects of competition, most are seen as non-competitive events held in order to explore new design concepts and ideas.

Recently, game jams have become increasingly popular among professional game developers, students, and hobbyists. Since the first *Nordic Game Jam* in 2006, game jams have spread across the world, some taking place in unusual "locations such as castles, planes, busses" and even trains (Kultima, 2015, p 2). One reason for their popularity might be the inspiring, collaborative spaces they provide. Jams allow people from diverse backgrounds to come together, sharing their ideas with people who have a common passion. These "jams" are laid-back experiences that "bring together game developer enthusiasts" to explore themes with "creativity, collaboration and experimentation" (Reng, Schoenau-Fog, & Kofoed, 2013, p 14-15).

Essentially, the concept of a "Game Jam" is a short prototyping event where people feel safe to test innovative ideas and meet new people. It was within such a welcoming space that I was able to personally experience intercultural collaboration during the *Sámi Game Jam*.

4.4.2 The Six Jam Games

At the start of the *Sámi Game Jam*, the participants were presented with 12 predetermined themes based on topics of Sámi culture and life. First, each of the six teams was allowed to choose a theme, then for a challenging twist, a second theme was randomly assigned to each group (Sami Game Jam, n.d.). The 12 themes are summarized here:

Cross-Generational Stories

"In the nearby mountain lives Stallu, the man eating ogre. . . . I know my territory, it's monsters and spirits" (Sami Game Jam, n.d.).

Sámi stories are passed down from generation to generation. They teach Sámi youth important lessons and "the right way of doing things"(Sami Game Jam, n.d.).

Border Crossing People

"One day it was one village. The next day it was two. . . . In the years to come the villagers paid their taxes not to one, but to three countries" (Sami Game Jam, n.d.).

Although divided by four countries, the Sámi nation is still "one united Samiland, Sápmi"(Sami Game Jam, n.d.).

Living Outside the Samiland

"I miss home, where I can breath again, where I can hear my language and be with my people. Until I want escape again. Back here. In the city" (Sami Game Jam, n.d.).

Many Sámi people live far from Samiland, in cities such as Helsinki, where they often identify "as 'city-Sami'" (Sami Game Jam, n.d.).

Persistent Stereotypes

"People see me, but they don't really see me. They expect me to behave and act like my ancestors did. . . . I'm not here to fulfill the stereotypes, not the good ones or the bad ones" (Sami Game Jam, n.d.).

As the world changes, for some reason the Sámi "should stay the same" (Sami Game Jam, n.d.).

The Future Sami

"Where do we go from here? . . . What happens to us and the Samiland?" (Sami Game Jam, n.d.).

How will the Sámi culture learn to survive? Can cultural traditions and knowledge "be adapted to meet the demands of the future?" (Sami Game Jam, n.d.).

Lost Memories

"When Áddjá is gone, who will tell his story? When he forgets, who will remember?" (Sami Game Jam, n.d.).

Older Sámi people "in institutional care" often feel a loss of connection to their culture and languages. Within these spaces nothing "reminds them of the life they've lived" (Sami Game Jam, n.d.).

Ultima Thule

"I am the light and I am the darkness, I am the strong and I am the frail. In all extremes, I have persisted and adapted – but for how long?" (Sami Game Jam, n.d.).

Defined as the "distant unknown," *Ultima Thule* explores the beautiful extremes found within the Samiland's arctic home (Sami Game Jam, n.d.).

Ethnostress

"Don't panic! It's up to you to ensure that Sami culture, language and traditions survive. No pressure." (Sami Game Jam, n.d.).

Today, the culture and languages of the Sámi is endangered and each Sámi person inherits the heavy "responsibility of preserving and reviving their culture" (Sami Game Jam, n.d.).

Strangers in Their Own Land

"Speak – but speak our language. Wear clothes – but only what we want you to wear. Learn – but learn in our way" (Sami Game Jam, n.d.).

The traumatic assimilation polices of the past still remain as "a deep scar" upon the Sámi people (Sami Game Jam, n.d.).

The People of Eight Seasons

"Nature will tell us what's next. . . . We listen and nature will show. We gulahalla luondduin – speak with the Earth" (Sami Game Jam, n.d.).

For the Sámi people the circle of the eight seasons provides "the rhythm of life" (Sami Game Jam, n.d.).

One Nation, Many Languages

"My great grandmother spoke Inari Sami, Northern Sami and Finnish. . . . I speak only Finnish. How can my children find their voice if they don't know their mother tongue?" (Sami Game Jam, n.d.).

Being multilingual has always been a part of Sámi life. And while some "have lost their language," they still refuse to "fall silent" (Sami Game Jam, n.d.).

Activism and Artivism

"An island. . . . Occupied by brave Sami warriors. Fighting for their rights with disobedience. Using words and art as their weapon" (Sami Game Jam, n.d.).

While the Sámi nation is a peaceful one, for centuries they have had to "fight for their survival." For this, many have used "words, art and music" (Sami Game Jam, n.d.).

In collaboration with Sámi team members, the groups were given freedom to explore and interpret these 12 themes however they liked. Six small carefully-crafted games resulted, each intended to be seen as a distinct work of art (Finnish Game Jam, 2018). These six games were titled *Gufihtara eallu, Joðus - On The Move, Lost Memories, Mu Luodda, Rievssat,* and *Sáivu*. A short summary of each game will be presented here. (Also see appendix G: *Sámi Game Jam — Game Elements* for a more comprehensive review.)

Gufihtara eallu

The first game described will be *Gufihtara eallu*, as it was the game created by my own team. Throughout development, our team primarily focused on just one of our themes, *Cross-Generational Stories*. A substantial contribution in creating the game's narrative was made by our Sámi team member, Hanna Helander, who had previously worked in the Sámi Archives and was currently writing a dissertation on Sámi storytelling.

Created using the *Samsung Gear VR* powered by *Oculus*, the game was a "hands-free, story-driven, virtual-reality game" where players would listen to the traditional Sámi tale of the *Kufittar* (or Gufittar) while exploring the beautiful arctic wilderness (Mariisi, 2018). In Sámi storytelling, the *Kufittar* are a legendary people who dwell "in the Saivo world" or the "inverse" land beneath the ground (Goranus Oy, 2013). Their ancient songs were believed to be how the early "Sámi learned the skills of Joiku" (Mariisi, 2018). During the gameplay experience, players were required to solve a small puzzle based on this folklore, clues to which were embedded within the narration. The interactive narrative concluded with a brief mention of other Sámi stories and ended by emphasizing the important role generational story-telling plays in Sámi life.

The 3D game visuals and environment were rendered in a low-poly art style, and the story was given audio voice-over narration in Sámi, English, and Finnish (see Figures 15 and 16). At the beginning of the game, players could choose which language they preferred. 3D game assets were based on traditional objects associated with Sámi culture and life, e.g., a Sámi reindeer herd, iron knife, winter boots, and Laavu (a temporary Sámi dwelling), all of which were illustrated from concept art designed and approved by our Sámi team members.

Figure 15. *Gufihtara eallu Game Assets.*

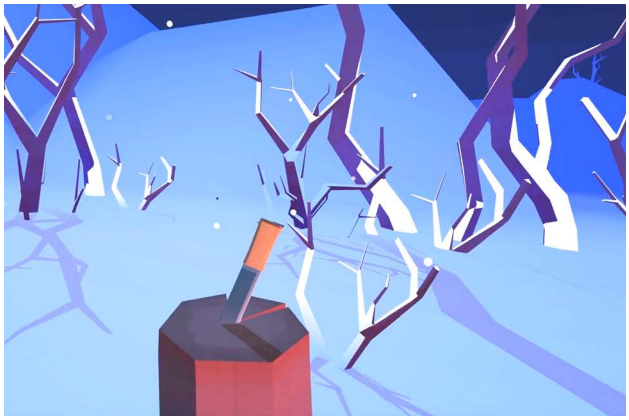

Figure 16. *Gufihtara eallu Gameplay Screenshot.*

Jođus - On The Move

A 2D single-player game, *Jođus* reflected contemporary Sámi culture and life. During the game, players would literally balance "city and country, nature and culture, tradition and technology" (Tattz & Enibolas, 2018). The team built a custom "balance board" controller which required the standing player to lean left or right in order to move a 2D game character.

While playing this graphically illustrated, cheerful game, small culturally-significant items were available for the player to collect. At the end of the game, these symbolic "pick-ups" were each explained to represent a different diverse aspect of contemporary Sámi life, e.g., modern helicopter reindeer herding and historic salmon fishing. Examples of the collectibles included backpacks, owls, coffee cups, and a traditional Sámi hat, each item linked to a short quote written by Sámi participants. The intent of the game was to express the Sámi people's perspectives on the future and to demonstrate the delicate balance between traditional and modern life that they currently face (Tattz & Enibolas, 2018).

Lost Memories

Developed for *SteamVR*, this first-person game focused on the themes *Forgotten Memories* and *Living Outside the Samiland*. Gameplay allowed players to explore the perspective of "a Sámi person living in a big city," and highlighted some of the things fading from the Sámi culture that they might be longing for (Horatiuromantic & Luula, 2018).

In this stylized low-poly game, a player begins in a modern city apartment and uses a portal located in the middle of the room to travel to the Utsjoki wilderness. Each environment has a specific mood; the apartment is serene with soft jazz music while the arctic wilderness is ethereal with its crackling fire and Northern Lights. Players interact with objects related to either environment, such as a television and a pizza, a reindeer antler and traditional Sámi boots. The dilemma is that once the portal is accessed, it begins to shrink until, at the end of the game, the players must decide which "world" they would like to remain in, a real-world choice many Sámi currently feel forced to make (Horatiuromantic & Luula, 2018).

Mu Luodda

Mu Luodda was created to be "an interactive narrative documentary game," where players can traverse *Ultima Thule*, the harsh landscape of snow and ice. The game emphasizes "the mythical beauty" of the arctic land that the Sámi have dwelled in for centuries (M-juna, 2018). The narrative also examines the tension many Sámi feel between their desire for the cultural traditions of life in Sámiland and the lure of modern cities to the south.

In this 2D/3D game, consisting almost entirely of black and white graphics, Sámi participants (with voice-over narrations in Sámi) encourage players to personally reflect on this topic. With limited music, the game's mood is both quiet and reflective, players "clicking" to move and eventually choosing which way to travel, towards the city or back to Sámiland (M-juna, 2018).

Rievssat

Another game which utilizes an alternative controller, *Rievssat* was inspired by the themes *The People of Eight Seasons* and *Strangers in Their Own Land*. Using a foot pedal and a leap-motion controller (see Figure 18), players become "a willow ptarmigan or riekko," a native northern European bird, using small whirlwinds to fly through Sámiland and collect food (Zhamul, 2018). With atmospheric low-poly visuals and gentle music, the game has eight levels, each representing a different season associated with cyclical Sámi life (Zhamul, 2018).

As the game progresses, each level or season forces the bird to adapt, as environmental changes due to "human interference" slowly increase (Zhamul, 2018). A solemn voice-over narrative in Sámi connects the loss of the bird's natural habitat with similar emotions many Sámi people feel about the outside influences on their own homeland (Zhamul, 2018).

Figure 17. *Rievssat Gameplay Screenshot.*

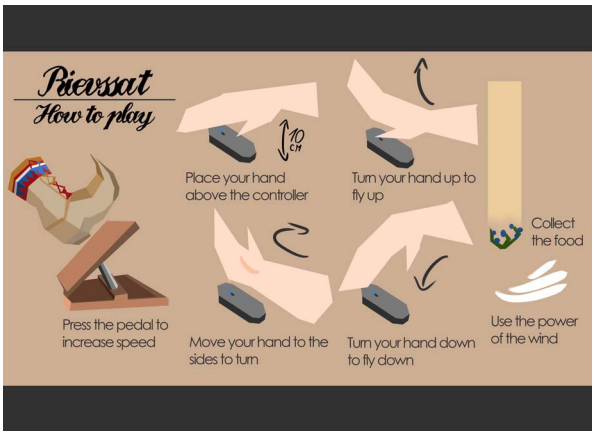

Figure 18. *Rievssat Play Instructions.*

Sáivu

The only game to utilize touch screen capabilities, *Sáivu* allows players to experience the themes of *One Nation with Many Languages* and *Activism and Artivism*. With a colorful 2D graphic style, the game encourages players to learn about Sámi languages and life (ArchBang, 2018).

Figure 19. *Sáivu Game Logo and Skáimmadas.*

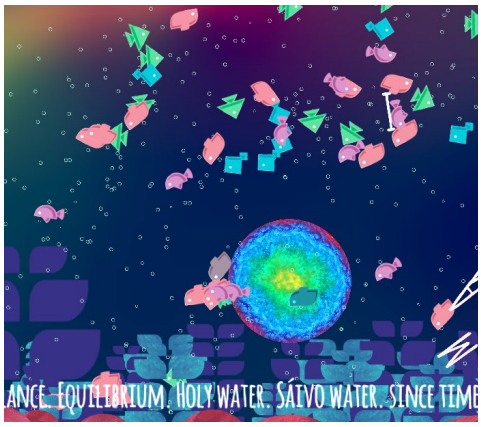

Figure 20. *Sáivu Gameplay Screenshot.*

During gameplay, players must "swipe currents to guide letters" and collect Sámi words that "nature might speak" while avoiding red areas on their screen (ArchBang, 2018). If players don't take "good care of the fish in the lake" then the antlered Sámi fish spirit, *Skáimmadas*, will appear (ArchBang, 2018). Angrily, he chastises the players in three of the Sámi languages, Skolt Sámi, Northern Sámi, and Inari Sámi (see Figure 19).

Overall, the game is intended to address the cultural issues of environmentalism, salmon fishing, and the loss of their Indigenous language, which the Sámi currently face (ArchBang, 2018).

4.4.3 Collaboration Methods

From its inception, the *Sámi Game Jam* was intended to highlight inclusive game experimentation and creative development with a specific Indigenous culture. Carefully planned to inspire communal intercultural game production, it became an excellent example of well thought-out, e-empathic, and collaborative development. When discussing the event, one of the project organizers, Outi Laiti, said, "it has been more about transmitting emotions through games . . . indirectly or virtually [experiencing] these worlds. We didn't give [the participants] an option to stay outside of the topics. They actually had to experience them" (Red Stage Entertainment, 2018).

The *Sámi Game Jam* ended up fitting closely within the *Intercultural Sensitivity* model proposed by this thesis (see appendix B: *Intercultural Sensitivity Model*). The facilitators and each of the six teams included multiple Sámi representatives, organizers, and play-testers, and all the participants, Sámi and non-Sámi alike, strove to collaborate equally with each other. Any story writing or folklore used within the games was provided by, approved, and written in conjunction with Sámi team members. In addition, the games were all based on themes directly related to topics in Sámi culture and life, with some games purposefully addressing specific Sámi cultural challenges or stereotypes, such as the environmental problem of overfishing, the loss of languages and culture, and concerns about the future of the Sámi. A final "sensitivity" aspect of the *Sámi Game Jam* is that many of the Sámi collaborators were specialists in various Sámi cultural topics, such as language, art, music, and storytelling.

In regards to some of the benefits to the Sámi people themselves, the inclusive environment that the event created introduced many of the local jammers to various aspects of game design and production, while at the same time acknowledging the beauty of Sámi culture, storytelling, and tradition. Eventually, a final exhibition is intended to share these topics globally. Finally, based on my own observations, many local participants seemed to have left the jam interested in pursuing further game development events and possibly entering the video game industry.

In summation, every aspect of the *Sámi Game Jam* demonstrated components of e-empathic game design and co-development. The pre-jam educational and cultural sensitivity sessions and the daily communal meetings in the *Laavu* created safe spaces for jammers to interculturally share their ideas and experiences, while also helping the non-Sámi participants to emotionally and intellectually empathize with their Sámi team members. In game development, every team attempted to be as respectful and as accurate as possible in their project's representation of the Sámi culture, specifically of the Sámi people who reside in Finland. As jammer Christopher Hamilton, board member of the *Finnish Game Jam*, commented, "I really believe that games are more than just entertainment. They are art, they're educational, they have the power to challenge us. And they have the power to change how we think about things" (Red Stage Entertainment, 2018). Overall, though limited to a very short time frame, I feel that the jam achieved a tremendous sense of genuine camaraderie and cooperation with the Indigenous Sámi community members.

As a footnote, as this experience was organized in conjunction with the Finnish Game Jam and the municipality of Utsjoki, it was a non-profit event and thus, presented no concerns about compensating the Sámi team members as per the proper industry rates. However, all of the participants, Indigenous and non-indigenous alike, were reimbursed for their travel expenses.

4.4.4 Personal Reflection

In early January of 2018, I was excited to read on the *Finnish Game Jam* Facebook page about the *Sámi Game Jam*, a new upcoming game jam event. Encouraged by both friends and academic mentors, I decided to apply and was accepted. I remember being extremely enthusiastic because, not only had I never traveled so far north before, but I would finally be able to experience an inclusive "world game" development event first-hand.

Before the jam, each participant received a packet with general information, including an invitation to join the event's Discord channel where we could introduce ourselves and share our personal stories. As jammers revealed their diverse interests and backgrounds, many traveling long distances from other countries, I became more and more pleased with my decision. I was also a bit apprehensive because I knew I would be entering a very sensitive intercultural setting and, for the first time, collaborating with people of an Indigenous culture. Above all else, I wanted to be respectful and open-minded, but I worried that I might accidentally offend. Still, on February 20th, I was eager to make games, embrace the -35C temperature, and finally see the northern lights.

Days 1 & 2 — Opening and Pre-jam Workshops

The first day of the jam was reserved mainly for travel, and many of us met at the Helsinki airport, fresh faced and smiling. Once we had flown far, far north to Ivalo Airport, we all climbed into a bus and journeyed together to the tiny Finnish border village of Utsjoki. That evening, we crowded into the Laavu for the first time. Out in the arctic cold, sitting on reindeer hides around a fire, we introduced ourselves to each other and the game jam was officially opened. I remember feeling particularly emotional that evening, sensing the sacred and communal atmosphere in the Laavu.

The next day was a workshop day, when we attended sessions with various experts on Sámi art, culture, and life. To me this day was very important, because it provided crucial information and sensitivity training about the Indigenous Sámi culture. During a Sámi music presentation by local Sámi musician Anna Näkkäläjärvi-Länsman, we were given a short lesson on Sámi language, history, and culture. But I was really fascinated when she shared the traditional Sámi art of *joiku*, an ancient cultural song form that has been passed down from generation to generation. She explained that a joik was a musical embodiment of a person, place, or animal, and *only* those who are of Sámi background can create an authentic Sámi joik. She was then kind enough to share a personal joik of a family member. Finally, she invited us to view one of her upcoming music videos. Already a very intense morning, I remember feeling especially emotional as we listened to and watched such a moving presentation. I was not the only one who had to wipe the tears from my eyes.

Later that afternoon, a number of us braved a guided nature hike through the Utsjoki wilderness (illustrated by Figure 21). Although a sweaty and difficult climb, I found myself really appreciating the harsh but breathtakingly beautiful natural environment. At the top of the hill, we drank hot cider and took reference photos in the brilliant arctic sunlight. Another workshop presented by nature expert Otso Suominen from the Kevo research station ended the afternoon. He discussed the various environmental impacts climate change has had on Utsjoki. Finally, later in our evening Laavu session, the teams were announced, with invited jammers assigned the positions of team leaders. I went to bed that night exhausted but ready to start making games the next day.

Day 3 — First Jam day

Thursday was the first official working day of the jam. That morning in the theater, we were introduced to the 12 predetermined themes (a summary of the themes is in section 4.4.2). As a team, we were allowed to vote for one of the themes but then, to increase the challenge, a second theme was randomly assigned. The six teams then spread out and found spaces to get to know each other and begin brainstorming. My team was lead by a friendly pair of professional game developers and jam veterans, Krista Erkkilä and Miikka Harjuntausta. They introduced us to the *Gear VR* and showed us some past jam "experiments" they had created. I had never used the Gear VR before, so I found it intriguing to interact with a game using only the position of my head.

Besides myself, our team also included Hanna Helander, a Sámi specialist on Sámi folklore and storytelling, and Aku Seppälä, a professional Finnish game developer and designer. Finally, two young teenage Sámi boys from the local Utsjoki area, later dubbed M1 and M2, completed our team. Based on our backgrounds, especially Helander's personal knowledge of traditional Sámi stories, we decided to create Gufihtara eallu by focusing on our theme, *Cross-Generational Stories*. Both M1 and M2 were noticeably excited to build a game around the eerie creatures found in Sámi folklore. Later, again in the surroundings of the Laavu, our team leaders Krista and Miikka presented our game ideas to the rest of the participants.

Days 4 & 5 — Jamming

For our project, I took on the task of creating and texturing all the 3D models and assets used in the game. I also helped design the game's 3D environment and provided some voice acting. Cramped in a small room for several days, we passed around snacks, experimented with ideas, and laughed together. While I was modeling, other team members worked on programming, game design, technical art, and narrative. Next to me sat some of the jam's youngest participants, M1 and M2, who both worked on the game's design, sound, and story.

To illustrate each asset, I first tried using online references, always turning to the boy, M2, and asking if they were correct. Initially he was very quiet and would softly respond "yes I think so." Eventually, I decided instead to ask him to sketch each asset for me. I knew he didn't have the expertise to create his own 3D models, so I wanted my models to represent him and his Sámi perspective as much as possible. I also wanted to make sure he felt as included as possible. He ended up becoming our main concept artist.

For each asset, M2 would sketch in pencil and place the sketches by my computer. I would then create the models from his designs. Each time a model was finished, I presented it to him and the rest of the team for approval. He would usually smile and respond "yes, that's . . . pretty good." At one point when we needed an image for a wooden sign, M2 revealed that he could use photoshop, so I asked him to illustrate and send me a graphic which I then placed on the 3D model (see Figure 22). Near the end of the jam, I took pictures of all the sketches and drawings our team had created and placed them within our 3D game world. That way, when the players approached the Laavu at the end of the interactive

experience, they would plainly see our process and the distinct work of our Sámi team members (illustrated by Figures 23 and 24).

Each night we would meet in the Laavu, taking turns huddling by the fire, reviewing the day's work and sharing helpful suggestions. During the Friday session, Kate Edwards, former Executive Director of the International Game Developers Association, arrived and shared some of her experiences from her work as consultant for content culturalization. She accentuated the vital importance that cultural sensitivity and accurate representation should play in the commercial game industry. Also during the week, a number of newspaper reporters came to cover the event, and we were interviewed by two members of Red Stage Entertainment for a short documentary.

Game jams are normally intense experiences, usually as a result of the condensed time frame. But with intercultural relations thrown in on top of it, this jam ended up being especially intense. Unfortunately, this also made it difficult for us jammers to observe what the other teams were doing. Regardless, every now and then I tried to take some time to walk around and talk with those developers who were also taking a break. What I observed were generous people cross-collaborating with each other, offering help for programming bugs, voice-acting, or just general advice and support. When I was asked to provide the english voice-over narration for our game, wanting to be as accurate and respectful as possible, I was embarrassed and frustrated as I struggled over and over to correctly pronounce the Sámi words. Graciously, my team members, especially those with Sámi background, assured me that it was okay.

Days 6 & 7 — Closing

The final day of a game jam is a mad rush to finish, upload, and present. This jam was no different as we were required to submit our games to itch.io and record additional gameplay videos for a future exhibition. That afternoon, the Áilegas center was opened to the local public and a number of Utsjoki community members came to play-test our games. I was pretty nervous when we revealed Gufihtara eallu because I was hoping, above all else, that our game was seen as respectful to the community. Family and friends of the Sámi team members were there and, when we presented, many of them looked excited and happy. Seeing their faces I relaxed, feeling very proud of my team and our project.

Later that night, most of us jammers shared our remaining snacks and our final games with each other, and I felt a great sense of connection with the other jammers, more so than during a normal jam. Mentally and emotionally drained, I felt changed. In fact, the next morning I surprised myself when I hugged one of the Sámi collaborators goodbye and started crying. In hindsight, I believe I was moved to tears because with my own eyes, I had seen on the faces of the Indigenous community members how wonderful it was for them to play a game about their own culture.

As we waited to depart at the Ivalo Airport, I remember seeing traditional Sámi clothing for sale in the gift-shop and feeling suddenly angry and even a bit ashamed. I had become aware, my own intellectual and emotional perspective had changed, and I could no longer be ignorant, or accepting of hurtful forms of cultural appropriation. I went to the *Sámi Game Jam* with enthusiasm. I returned home conscious of the fact that this new empathic perspective was something that I wanted to study more and hopefully share with the world.

Figure 21. *Sámi Game Jam — Photo from Nature Hike.*

Figure 22. *Gufihtara eallu — Reindeer Sign*

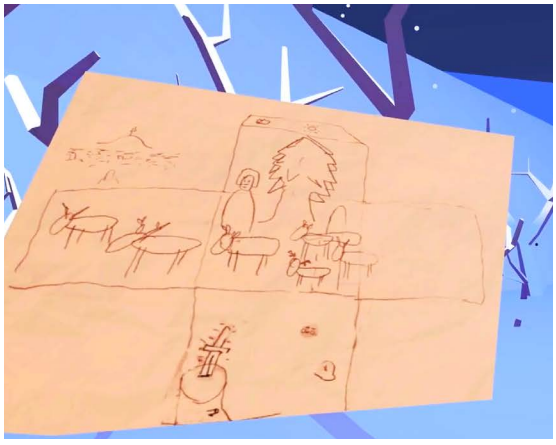

Figure 23. *Gufihtara eallu — Design Sketches.*

Figure 24. *Gufihtara eallu — Concept Sketches.*

Chapter 5. Conclusion

Introduction

Chapter 5 will conclude the thesis by discussing the learning outcomes, limitations, and questions that arose during the creation of this work. Finally, the chapter will end with some final thoughts on the research topics, and make proposals for the future application of the research and theoretical models developed by this thesis.

5.1 Learning Outcomes

The primary goal of this project was to examine how games can be collaboratively designed to empathically share cultural perspectives and emotions. Some of the diversity issues present within the video game industry were discussed, especially those related to Indigenous cultural content. Another goal of the paper was to promote the "world games" movement of game production, highlighting the ability of inclusive spaces to encourage empathic connections between Indigenous and non-indigenous developers alike. Finally, this thesis set out to explore the ways that games, as an interactive medium, can be used both to address and, consequently, eliminate some of the disconnection that occurs between people of varying backgrounds. At the same time, co-development has the potential to reduce cultural stereotyping and misappropriation prevalent in today's gaming industry.

The thesis research began with a literature review, examining theories found in current psychological studies on empathy, and deriving the recurring concept that empathy is comprised of two components, cognitive and affective. Academic theories on cultural empathy were specifically explored, and Wang et. al's (2003) theory of ethnocultural empathy was examined. Made up of intellectual, emotional, and communicative components of cultural empathy, this theoretical model was studied in depth and eventually found to be an excellent foundation for the analytical model later developed and proposed within this thesis.

The literature review continued with further inquiry focused on methods of empathic game design and production. Primarily conducted by game researchers, the selected literature examined the relationship between games, culture, and empathy. Ultimately, a correlation between four specific game elements and player empathy emerged. These were sorted and compiled into four categories, mechanics, characters, environments, and immersive narratives, each providing interesting methods and indicators for e-empathic game design and theory. Characteristics of e-empathy could be found within many of these elements, including cultural perspective taking, identification, parallel and reactive empathy, and emotional response.

The research also studied how each of these game elements functions within Indigenous game design and collaborative development, leading to a more in-depth study of co-development with Indigenous communities. Here it was discovered that aspects of intercultural sensitivity are vital for genuine co-development and production. Some features recommended for developer sensitivity include open-mindedness, non-judgment, and a sense of self-esteem. From this a theoretical model was designed, proposing a series of questions that future developers, working with Indigenous content, could ask themselves. Some of the questions include:

> *Were Indigenous community members involved in all stages of game design and production?*
>
> *Are any cultural lessons integrated into the game mechanics or environments?*
>
> *Does the game confront harmful stereotypes or media tropes?*
>
> *Did the developers provide an inclusive and respectful space for Indigenous team members?*

Studies on co-development indicated that games could be used to change cultural perspectives both emotionally and intellectually, reducing cultural biases and the inclination to stereotype by both players and game developers alike. Overall, the research indicated that veritable collaborative game development could lead to more interculturally sensitive developers, players, work atmospheres, and in the end, better games.

From the research collected within this thesis, two theoretical models were ultimately developed and proposed. The *Ethnocultural Empathy Analysis* model looked specifically at methods for e-empathic game design (Indigenous or not) and the *Intercultural Sensitivity* model proposed reflective questions for Indigenous co-development. These models were then applied to three game project case studies. Two of the studies examined the small yet

globally-accessible commercial games, *Never Alone* and *Mulaka*. The third study, the *Sámi Game Jam*, was a personal reflection of my first-hand experience in an Indigenous co-development setting. From this examination, the thesis uncovered abundant opportunities for Indigenous co-development as well as strong indications that well co-developed commercial games can be both profitable and authentic representations of Indigenous culture.

Throughout this research, other interesting benefits, related specifically to the preservation and well-being of Indigenous communities, were discovered. For example, many studies, including the three case studies, indicated that elements of game design could be intentionally used for many advantages, such as:

> *Cultural preservation of Indigenous language, stories, art, and traditions.*
>
> *The use of interactive experiences to e-empathically share cultural perspectives.*
>
> *Reconnection to a culture within marginalized communities, especially for the young.*
>
> *Direct confrontation of cultural appropriation and the reclamation of Indigenous cultural identity.*

As a personal benefit, while reflecting on my *Sámi Game Jam* experience, I discovered many deep-seated personal desires for true inclusive development. That experience, coupled with the execution of this research, has clearly changed my own e-empathic perspective. I enjoyed learning more about empathic theory and interculturalism, and by studying and playing these games, I now know much more about the *Iñupiat*, the *Tarahumara* and the *Sámi* than I knew before beginning this thesis. Besides learning about other cultures, I also learned a lot about myself. Because of this, I feel that these game projects were indeed successful examples of games that build ethnocultural empathy. Upon the conclusion of this thesis, I realized that though I learned a great deal, my research left a number of questions still needing to be addressed.

What is the line between cultural appropriation and inspiration?

In the end, this is a difficult question to answer. However, based on my research, it seems clear that, if discussing appropriation of an Indigenous or "living" culture which has been marginalized or persecuted in the past, then respect and sensitivity are paramount. On that note, if an Indigenous community doesn't want to share their cultural perspective, then they

shouldn't be forced to. Conversely, if they *do* want to explore games as a medium for their own cultural expression and reconnection, then developers should ensure that their game production is as respectful and as inclusive as possible by actively listening to the Indigenous people. Essentially, that's what was discovered in this work, that e-empathy is about intellectually and emotionally walking in someone else's shoes.

With constant advances in technology and global digital connection, excuses for neglecting inclusive game development hold less and less validity. Although some of these Indigenous communities reside in locations with little access to technology, this thesis proposes that commercial game developers pursue alternate and creative ways to effectively work with them. It can also be argued that it is economically more feasible to authentically co-produce a game from the beginning, rather than incurring the additional expense of retroactively correcting cultural misrepresentation or appropriation errors. In the end, if that's not possible due to financial, technical, or physical limitations, then developers need to ask themselves:

> *Why are we making this game in the first place?*
>
> *If our intention is to highlight this culture, then why aren't we including its people?*

If the answers to these questions do not include "in order to promote an empathic understanding of the culture and beliefs of this Indigenous community," then perhaps the developers need to pursue other projects, leaving the development of authentic, culturally inspired *Indigenous* games to the Indigenous communities themselves.

5.2 Limitations

With any theoretical research, there are bound to be a number of unavoidable limitations. Although a broad range of documents were considered for this thesis, many studies that didn't address the topics adequately or were nearly impossible to access had to be excluded. The thesis also cites strictly subjective and reflective qualitative data which did not include any quantifiable information. Since many of these topics are already considered to be highly subjective, especially psychological theories on empathy, the amount of available, quantifiable information was extremely limited. Additionally, due to its pioneering nature, existing academic research on empathic ethnocultural Indigenous game development is lacking and much of the research on game design had to be adapted to the e-empathy

construct. One final drawback was that the analysis of the three case studies was limited to my own perspective as I was the person playing the games and documenting the results.

All three case studies, including the *Sámi Game Jam*, contained similar limitations. Each game project was executed by a small development team, and although this may have contributed to their successful Indigenous collaboration, it presents the question of whether the proposed methods would be as successful in a larger AAA game studio. If not, then how could these models be adjusted for this larger environment? The *Sámi Game Jam* had other limitations because, although it was an actual experience which demonstrated the thesis topics, the information derived from it was based solely on my personal perspective and was written substantially after the actual event. Although attempts were made to gather additional data and observations from other jam participants, in the end, time constraints and my eventual decision to act sensitively regarding some obstacles prevented that from happening. Because of these limitations, I was sadly unable to include the feelings or perspectives of the other participants, or whether or not they viewed the jam as successfully collaborative as I recall.

Although this thesis used research and analysis to propose two theoretical models, a practical application was not included in the final work, so their actual functionality remains unproven. Without doubt, the two models have much room for improvement, perhaps by inviting Indigenous community members to review and contribute suggestions for the models.

Finally, the question remains, can games really be used for world change? Although I personally believe that it's possible, this form of collaborative development and e-empathic game design genre is so new that actual quantifiable data on this topic is still very limited. Clearly, more research needs to be done, but as I am a game designer and not a research scientist, I am currently limited to proposing theories.

5.3 Potential for Future Research

During the process of researching this thesis, a number of future applications for this work became apparent. First, the theoretical models that resulted from this study might be used as a design basis for future culturally-inclusive game jam events, specifically, collaborative experiences with Indigenous communities. This thesis might also encourage the development of more games designed to explore the topic of empathic ethnocultural game design, encouraging the sharing of cultural perspectives by communities around the world. It might also encourage game researchers and developers to further explore components of e-empathy and game design, to experiment with e-empathic game elements, and to hopefully promote more cultural diversity within the game industry. Finally, I sincerely hope that the conclusions and theoretical models proposed by this research will be used to inspire future game developers and game researchers to apply the methods of Indigenous collaboration to game production, which I believe will benefit not only the game industry but the entire world.

For my own future research objectives, I plan to further explore these topics by creating more culturally-inclusive work, and by continuing to be actively involved in collaborative game development experiences. Also, in my future career, my goals and dreams are to work in the video game industry with a diverse and inclusive company like Lienzo or E-Line Media, eventually creating more inspiring "world games" like the ones I experienced while writing this thesis.

5.4 Conclusions

This thesis began with three research questions:

> *Can games be designed to encourage ethnocultural empathy?*
>
> *What game design methods and/or elements can be used to elicit empathy in players?*
>
> *How can designers work sensitively with Indigenous communities during game development?*

Through the systematic examination of the proposed theories in this thesis, I believe that these questions were satisfactorily addressed. Numerous elements of game design were demonstrated to elicit empathy (and e-empathy) in players. The case studies gave three

explicit examples of how games can be e-empathically designed and collaboratively produced. And their designers demonstrated that by adhering to specific characteristics of intercultural sensitivity, this form of development can successfully create respectful representations of Indigenous cultures.

As I near the completion of my graduate studies, I find it extremely regrettable that in the year 2019, much of the game industry is still lacking in diversity. I've realized that we game developers should be asking ourselves why such a passionate industry is so devoid of empathy. For this reason, I believe we should be consciously striving to include a wider range of cultural viewpoints in our work. By diversifying our perspectives and our stories, developers might even discover more innovative mechanics, characters, environments, and narratives. I continue to wholeheartedly support the creation of "world games" because I believe this process can inspire wonderful, beautiful, and unique games. In the end, I believe that intercultural and inclusive co-development and production are excellent methods of cultural preservation and empathic connection.

If a game is intended to highlight a people, especially a marginalized one, then the game's authentic design and production will benefit greatly from empathic collaborative development practices. I would like to stress here that the intention of this thesis was not to inform non-indigenous game developers that they have no right to produce games with cultural content. They most certainly do. However, this thesis strongly recommends that if they choose to do so, they use their privileges and talents to empower rather than to diminish others, especially those from Indigenous minorities. I must also plead with developers to avoid making an Indigenous game merely because it would be "exotic" or "cool." Developers can and should be interested in using games to celebrate cultures, but I argue that their motivation should be deeper than that. It should be about empowerment and cultural empathy.

On the other hand, I also believe that game developers should not be afraid to fail. With the sensitive nature of these topics, failure is likely to happen. Instead, failure should be embraced because it actually provides a great opportunity for learning, growth and self-improvement. At the 2015 GDC's Indie Games Summit, indie game developer Ben Esposito presented an inspiring lecture at the *Failure Workshop* (Esposito, 2015). He described his experience during the early development of his game *Donut County* (Esposito, 2015). Initially inspired by the Indigenous Hopi folk dolls he had collected throughout his travels, he had

planned to develop a game called *Kachina*. In the end, after being accused numerous times of cultural misappropriation, he finally realized that the reason he had failed was that, from the beginning, he had not thought to directly approach the Indigenous community (Esposito, 2015). Esposito ended his talk with some important advice for future game developers, which I think applies perfectly to the main intent of this thesis. He stated:

> [1] Research does not equal lived experience . . . [and] work that tries to represent someone else's lived experience has the danger of invalidating it.
>
> [2] When you do get called out, shut up and listen, and then examine your behavior, and then shut up and keep listening.
>
> [3] Marginalized folks don't owe you their time to explain these things to you. . . you're not entitled to marginalized folk's narratives and you're not helping by adding your perspective to their stories.
>
> [4] If it's really important to share someone's narrative, let them tell it.
>
> [5] If they don't have the tools, use your position to *empower* them, and if they don't want to share their story, that's fine because, *it's not your story.* (Esposito, 2015)

After three years of study and far too many hours of thesis writing, my simple goal is to ask game researches, developers, and you, to take a closer look at games which have the potential to connect our world and celebrate its diverse cultures and stories. E-empathic games can give Indigenous and non-indigenous people alike an opportunity to step outside of themselves and to culturally empathize with others. Currently, in a world where I feel there too much hatred, I believe that, like many other artistic mediums such as film, music, dance and the visual arts, games have the power to inspire social change. They are fun, they are beautiful, and through them, we all can have a future filled with cultural empathy.

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Figure 1. Empathy Cover Image. Drawn by the author.

Figure 2. Organizational Model of Empathy. Adapted from *Handbook of the Sociology of Emotions* (p. 444), by M. Davis, 2006, Boston, MA: Springer. Copyright 2006 by Springer Science+Business Media, LLC. Adapted with permission.

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Figure 10. Minnie Grey and Sean Vasce Co-designing. *Minnie Gray (l), Sean Vesce (r) (2)* [digital image]. E-Line Media & Upper One Games. Retrieved from https://www.dropbox.com/sh/hzborcatib0xg1y/AADITKcJCTEfLIuOYmubr1Xwa?dl=0

Appendices

Appendix A: Ethnocultural Empathy Analytical Model

Ethnocultural Empathy Analytical Model		
Components of E-Empathy	Game Elements	Questions for Analysis
Intellectual Empathy (cognitive)	Mechanics	Do any mechanics communicate cultural lessons or perspectives?
		Are tasks or puzzles designed around understanding cultural perspectives, lore, or traditions?
	Characters	Is the player asked to identify with the PCs/ NPCs? Cultural perspective taking?
	Environments	Is cultural information embedded in game environments? (clothing, music, symbolism, etc.)
	Immersive Narratives	Does the narrative encourage players to understand and/or accept cultural stories or lessons?
Empathic Emotions (affective)	Mechanics	Are there culturally based mechanics that elicit emotional responses? (‘death’, action, etc.)
	Characters	Are there instances where players feel parallel or reactive emotions towards PCs or NPCs? (identification or role-playing)
		Are any characters intentionally designed to inspire empathic emotions?
	Environments	What atmospheric elements (visuals, music, mood) are used to invoke e-empathic emotions?
	Immersive Narratives	Are there narrative moments (dialogue, narrative mechanics, cut-scenes) that encourage emotional responses?
Communicative (cognitive + affective)	Mechanics	Are there culturally derived game mechanics? (i.e., co-operative)
	Characters	Does the game confront any issues or stereotypes that people of this culture may face?
		Is supplementary “out-of-game” cultural information provided?
	Environments	Does the game implement real locations, audio and/or visuals from the culture? Is it a cultural ‘vignette’?
	Immersive Narratives	Is the player asked to communicate narrative understanding back to the game system?
		Are traditional cultural stories shared respectfully?

Appendix B: Intercultural Sensitivity Model

Intercultural Sensitivity Model - Co-Development with Indigenous Communities			
Questions for Inclusive development	Never Alone	Mulaka	Sámi Game Jam
Is the Indigenous community interested in sharing their cultural stories or traditions?	Idea came from Indigenous community directly	Approved by cultural governess, initial hesitation	Organized by Finnish Game Jam & municipality of Utsjoki
Were Indigenous community members involved in all stages of game design & production?	Cultural ambassadors — involved throughout production	Anthropologists & Tarahumara leaders involved in production	Each team had Sámi representatives, Sámi organizers & play-testers
Were community members present for all game decisions i.e., art style, music, narrative, mechanics?	Developers met regularly with community members during production	At times, but not always — 2 year process & no council or representatives	Teams all had Sámi team members
Have all depictions of the culture been approved by the Indigenous community?	Community & cultural ambassadors approved	Respected members of community approved game	Teams worked with their Sámi team members
Are any stories sourced from the original story owner or storyteller?	Storyteller's daughter — approved 'Kunuuksaayuka'	Anthropologist Enrique Servin — mythology	Story writing was in conjunction with Sámi team members
Has permission been granted from the story owner or community council for any narrative changes?	All changes approved by original storyteller's family	Enrique Servin — approved all cultural game & narrative elements	Sámi representatives & team members provided stories — approved
Are any cultural lessons integrated into the game mechanics or environments?	Interdependence, survival, respect for spirits & nature	Sharing & endurance, Rarámuri mythology & art	Each game had themes related to Sámi culture
Is the ownership & copyright held by the Indigenous community or council?	Upper One Games — indigenous-owned game company	Game ownership & copyright held by Lienzo	Possibly held by Finnish Game Jam & municipality of Utsjoki, CC?
Have the Indigenous developers & consultants been paid standard rates or royalties?	Cook Inlet Tribal Council — owns 36% of E-Line Media	Portion of earnings — donated for preservation of the Sierra Tarahumara	The game jam was a non-profit event
Does the game benefit the Indigenous community, i.e., financially, educationally, culturally etc?	Reconnecting youth to culture, Profits — Iñupiaq community, cultural issues	Preservation of culture, revival of myths, earnings donated to Tarahumara	Introduction to game jams, highlighted culture & issues, educational aspects
Does the game avoid generalizations & accurately represent the Indigenous culture and community?	Cultural insights' provide background info for Iñupiaq culture & life	All assets, colors, music etc. designed to be as accurate as possible	Teams attempted to be as accurate as possible, specific to Sámi in Finland
Does the game confront harmful stereotypes or media tropes?	Nuna — female protagonist, game addresses cultural issues	Highlighted Mexican 'Chihuahua' Indigenous culture & game production	A number of the games address cultural issues or stereotypes
Did the developers employ methods of intercultural sensitivity while working with Indigenous community members? i.e., open-mindedness, non-judgement etc?	Sean Vesce — open-minded, removed ego, developers worked hard to be respectful	Open-minded to 'fixing' cultural mistakes, adapted game narrative to fit cultural perspective	Pre-jam educational & cultural sensitivity sessions, daily meetings in Laavu
Did the developers provide an inclusive & respectful space for Indigenous team members?	Community council now owns part of E-Line Media, Gloria O'Neill executive chair	Developers traveled far distances to meet with community members & adjusted game elements	Teams members included Sámi members, attempted to work as inclusively & collaboratively as possible

Appendix C: Never Alone Game Elements

Never Alone Game Elements			
Mechanics	Characters	Environments	Immersive Narratives
Puzzle Platformer: local co-operative or single player 'switching' co-op (with A.I.)	2 PCs: Iñupiaq girl Nuna — young, traditional clothing & Arctic fox — white & cute	2 & 1/2D — L to R screen Loading screen: quotes & info about Iñupiaq people	Central Plot: discover source of blizzard & restore balance to nature
Achievements & Trophies: defeating foes, collecting insights, beating game etc	PC Fox: reborn — flying boy spirit (white fox hat & clothing)	Visuals: simple 'cartoon style' — influenced by traditional scrimshaw art	Audio voice-over narration: Iñupiaq language — Oral storytelling
Both PCs: Walk, Run, Jump, Swim, Brace — against wind	PCs cut-scene interactions — establish bond of friendship	Menu: save game & unlocked cultural insights	Main Story: based on Iñupiaq tale — 'Kunuuksaayuka'
Lose condition — if either PC dies	Nuna & Fox: gasp & whimper when 'killed'	Controls & insights displayed at screen bottom	Calm puzzle moments vs Intense moments of action
PC 'death' via: drowning, falling, being crushed, Polar Bear, Manslayer, grabbed by Sky People	Owl: Collectible 'cultural insights' — video interviews of Iñupiaq elders, storytellers, & community members	Music & Sounds: traditional sounding, windy, crackling fire, 'atmospheric' — very sad when Fox 'dies', peaceful at end	Other Iñupiaq stories: Blizzard Man, the Little People, Manslayer, the Rolling Heads, & the Sky People
PC Nuna: pick up & push boxes, climb ladders & ropes, swing, hold 'wall' spirits, Bola: throw attack & unlock collectilbes, areas, spirits	NPC: Owl Man — large eyes, holds scrimshaw pipe, lost drum, mentor, grants 'Bola'	Environment Elements: Wind — blow & push objects & PCs, Water — death, swimming, Ice — breaks, floats & shifts	Begins — Nuna in danger & saved by Fox, village destroyed by 'Manslayer'
PC Fox: fast, higher jumping ability, climb walls, wall-jump, call spirits, crawl small holes, Spirit Form: fly	Enemy: Manslayer - scary teeth, fire ball throwing, hitting — wants bola & 'kills' Fox	Mood: harsh, grey muted colors, 'wintery' — limited visibility, stormy atmosphere, 'vignette'	Narrative: storytelling tradition — 'pass down wisdom' (owl symbol)
	Enemies: Polar Bear, Manslayer, Little people, Sky People — northern lights fly & grab PCs, Big Man	Swallowed by whale — very 'blue', quiet, swimming & water based puzzle area	Cut-scenes: scrimshaw style — simple 2D animations & voice-over narration or 3D character interactions
	Blizzard source: giant 'Big Man'— shoveling snow, 'Adze' pickaxe, 'literal platform', Nuna steals & breaks on rock — he sings at end	Island Village — northern lights, very stormy, dark & green tinted, 'storm' sound louder	Nuna cries, buries, & prays over Fox — 'animal spirit' reborn At End — Fox spirit says goodbye
		Forest level — grey, creaky branches, 'spirit' trees — final 'boss' fight Manslayer, use power against him — falls under ice	Last level — race against time, fast-action back through other levels

Appendix D: E-Empathy Analysis — Never Alone

E-Empathy Analysis — Never Alone		
	Questions for Analysis	Game Elements
Mechanics	Do any mechanics communicate cultural lessons or perspectives?	Local co-op — interdependence & Iñupiaq worldview, spirits interactions, bola weapon
	Are tasks or puzzles designed around understanding cultural perspectives, lore, or traditions?	Returning drum to elder, co-op puzzles, reflecting violence back to defeat story foes
Characters	Is the player asked to identify with the PCs/ NPCs? Cultural perspective taking?	Co-op mechanics — player attachment & perspective taking, Owl Man provides wisdom
Environments	Is cultural information embedded in game environments? (clothing, music, symbolism, etc.)	Traditional cultural clothing, enemies, spirits & Iñupiaq symbolism present, 'cultural insights'
Immersive Narratives	Does the narrative encourage players to understand and/or accept cultural stories or lessons?	Traditional stories from culture, highlights Iñupiaq perspective & traditions, teaches arctic survival
Mechanics	Are there culturally based mechanics that elicit emotional responses? ('death', action, etc.)	PC death often, intense action vs calm puzzle solving
Characters	Are there instances where players feel parallel or reactive emotions towards PCs or NPCs? (identification or role-playing)	Fox 'death' cutscene, PC death — gasp & crying, 'boss' interactions intense & scary
	Are any characters intentionally designed to inspire empathic emotions?	Nuna — small, sweet girl, Fox — cute & cheerful
Environments	What atmospheric elements (visuals, music, mood) are used to invoke e-empathic emotions?	Low-visibility, blizzard atmosphere, dramatic music, 'harsh' arctic environments
Immersive Narratives	Are there narrative moments (dialogue, narrative mechanics, cut-scenes) that encourage emotional responses?	Fox 'death' & praying cutscene, discovery of destroyed village, good-bye ending
Mechanics	Are there culturally derived game mechanics? (i.e., co-operative)	Co-operative mechanics & puzzles — cultural enemies etc.
Characters	Does the game confront any issues or stereotypes that people of this culture may face?	Female PC, 'insights' — cultural issues, stereotypes
	Is supplementary "out-of-game" cultural information provided?	Cultural insights, loading screen quotes & info
Environments	Does the game implement real locations, audio and/or visuals from the culture? Is it a cultural 'vignette'?	Voice-over narration — Iñupiaq language, cut-scenes in scrimshaw art style
Immersive Narratives	Is the player asked to communicate narrative understanding back to the game system?	Through puzzles & collection of 'insights'
	Are traditional cultural stories shared respectfully?	Iñupiaq language, scrimshaw art style etc.

Appendix E: Mulaka Game Elements

Mulaka Game Elements			
Mechanics	Characters	Environments	Immersive Narratives
Action Adventure: Run, Look, Jump, Sprint, & Dodge	Sukurúame: spiritual warrior & shaman, unlimited sprint stamina	3D game space — move in all directions etc.	Text: English & Español Voice Narration: Tarahumara language
Weak-Attack, Strong-Attack, Aim & Throw Spear Finishing Move - with 'cool down' period	PC, NPCs, Enemies, & Bosses: designed from Tarahumara culture & folklore	Each level: distinct color palette, mood, music, based on real locations	Loading screen quotes & notes: Tarahumara folklore / stories
Sukurúame Vision - reveals info (collectables, goals, etc.) with 'cool down' period	PC Spirit Forms: Eagle - flying Bear - attack & unlock Snake - water & ice Panther - climbing	Visuals: low-poly stylized & very colorful, 'vignette', simple 'faces'	NPC dialogue: important info highlighted in red Voice acting: only at beginning & end
Puzzles: water gears - hit to turn & match	PC spirit forms: Unlock areas Used in boss battles	Cutscenes: B&W digital paintings (simple animation) & written text	Narrative: based on Tarahumara folklore & cultural perspective
Potions: Soul - healing; Rage - speed & attack; Bomb - dmg enemies & unlock areas; Shield - temp. invincibility	Sukurúame Vision: see & speak to 'ghosts' See enemy life & hidden 'spirit' enemies	Music: traditional drums, flutes etc.	Need blessing from demigods to defeat lord of the underworld aka death & save the world
Harvesting & Crafting: Aloe: soul, Chia: bomb, Corn: rage, Laurel: shield (limit 10 per potion)	NPCs: hints & stories of Tarahumara folklore and traditions.	Wall Painting: embedded Tarahumara history (sacred space) in environments	Demi-gods: grant new abilities (power increases as game progresses)
PC Health: 3 'souls', each with 4 slots Save game: praying & offering at shrines	Enemy List: info & hints NPC ghosts': info on Tarahumara culture	Sukurúame Vision: hidden environmental elements, i.e., platforms	Final Boss 'Death': not cause of corruption but the effect (unbeatable)
Collectable 'Spirit' orbs: restore magic level	Potions: PC does traditional dance (depending on type)	Pause Menu & Travel Map: based on real geographical locations	Ending: gods destroy world anyway; from Tarahumara world-view "Sometimes it it better to simply start again" PC: falls to knees in defeat
Korima: spirit currency from enemies, pots, & rocks Purchases: 'power-ups'	PC loses a soul: leaves body dramatically Dancing: soul floats back	Underworld Level: Red hue, floating neon symbols & floating rocks 'foreboding' mood	
PC Power-ups: Magic cool down time Spear recharge time Damage % Melee range Health	Gods: floating white symbols 'Death': wolf-like; skeleton & heart exposed (corruption)		Outcome: prove worthiness of Tarahumara people to gods

Appendix F: E-Empathy Analysis — Mulaka

E-Empathy Analysis — Mulaka		
	Questions for Analysis	Game Elements
Mechanics	Do any mechanics communicate cultural lessons or perspectives?	Unlimited running, Korima, harvesting, spear fighting, 3 souls health, Sukurúame Vision, dance healing, save 'praying'
	Are tasks or puzzles designed around understanding cultural perspectives, lore, or traditions?	Restoring souls side quest, restoring water puzzles, speaking with 'ghosts', healing the 'giants'
Characters	Is the player asked to identify with the PCs/ NPCs? Cultural perspective taking?	3rd person perspective, players take on the Sukurúame role — combat & cutscenes
Environments	Is cultural information embedded in game environments? (clothing, music, symbolism, etc.)	Traditional clothing, colors, & music — traditional instruments, symbols, wall painting, NPCs provide cultural info
Immersive Narratives	Does the narrative encourage players to understand and/or accept cultural stories or lessons?	Narrative — based on mythology & Tarahumara cultural world-view, role of Sukurúame
Mechanics	Are there culturally based mechanics that elicit emotional responses? ('death', action, etc.)	Fast-paced action & fighting, dramatic soul 'loss', traditional dances to heal, praying to save game
Characters	Are there instances where players feel parallel or reactive emotions towards PCs or NPCs? (identification or role-playing)	During action sequences or dramatic cut-scenes e.g., end of game, NPC daughter is killed, Mulaka gain abilities — is empowered
	Are any characters intentionally designed to inspire empathic emotions?	Simple character designs, animations at times — sad or defeated
Environments	What atmospheric elements (visuals, music, mood) are used to invoke e-empathic emotions?	Quiet still before boss battles, vibrant colors, dramatic music, sounds from nature, underworld tension & atmosphere
Immersive Narratives	Are there narrative moments (dialogue, narrative mechanics, cut-scenes) that encourage emotional responses?	Beginning & ending cut-scenes, NPC stories & dialogue, healing of the 'giants'
Mechanics	Are there culturally derived game mechanics? (i.e., co-operative)	Sukurúame vision, transformation into spirit animals, endurance sprinting
Characters	Does the game confront any issues or stereotypes that people of this culture may face?	Discusses cultural issues of Tarahumara, fighting for homeland, corruption of humanity etc.
	Is supplementary "out-of-game" cultural information provided?	Cultural information 'quotes' loading screen, Game Menu — world map & enemy info list
Environments	Does the game implement real locations, audio and/or visuals from the culture? Is it a cultural 'vignette'?	Levels & sounds are based on real locations across Sierra Tarahumara, visuals & music inspired by culture
Immersive Narratives	Is the player asked to communicate narrative understanding back to the game system?	Perhaps while solving simple water puzzles or acceptance of game ending
	Are traditional cultural stories shared respectfully?	Narrative — in Rarámuri language, culture is depicted with knowledgable respect

Appendix G: Sámi Game Jam — Game Elements

SGJ Games	Game Elements				
	Theme(s)	Mechanics	Characters	Environments	Immersive Narratives
Gufihtara eallu	Cross-Generational Stories Persistent Stereotypes	VR hands-free navigation, pick-up & throw knife, quiet reflection	Limited to 1st person & NPC reindeer Traditional Sámi knife, boots, Laavu	Low-Poly 'storytelling setting': blue nighttime forest, quiet & gentle, mysterious music & mood	Audio-voice over narration: English, Sámi & Finnish Main story — Kufittar i.e., gameplay hints
Jođus - On The Move	Border Crossing People The Future Sami	alt control — balancing board; gameplay balancing & collecting elements	PC: from behind & abstract, symbolic picks-ups added to PC e.g., backpack, owl, coffee cup etc	2D: L to R & upwards movement; Sámi & City. Visuals & Music: graphic, cheerful	Quotes from Sámi people, exploring balance of culture and city life
Lost Memories	Living Outside the Samiland Lost Memories	VR object interactions, bring items from either world, portal slowly shrinks	1st person & object interactions — pizza, Sámi boots, reindeer antler etc.	Low-poly — City apartment: calm jazz & city sounds Portal to Utsjoki: natural setting, fire, northern lights	Explores what a Sámi person living in city might miss & must choose a world
Mu Luodda	Ultima Thule Ethnostress	Player can move in generated 3D space, click to go towards city or Sámiland	1st person — focus is on stories	Limited color, B&W 2D/3D illustrative graphics, mood quiet & reflective, limited music	Voice-over narration: Sámi with English text — tensions of Sámi life
Rievssat	Strangers in Their Own Land The People of Eight Seasons	alt control — hand control & motion pedal, wind tunnels — fly, collect food, & adapt	PC: Riekko — a willow ptarmigan	Environment: low-poly 8 seasons, gentle music, human interference — cut down trees etc.	Audio-voice over narration: Sámi with English text. Explores changing of Sámiland & culture
Sáivu	One Nation, Many Languages Activism and Artivism	Finger swipe 'currents' to guide fish, avoid red areas, collect letters & form Sámi words — language learning	NPC Fish Spirit: Skáimmadas — antlered fish, angry, & raps Collect: 'words nature might speak'	2D colorful graphic designs, magical mood, intro joik, music, 'Red' environmental dangers	Take care of fish, or Skáimmadas comes — narration in 3 Sámi languages: Northern Sámi, Skolt Sámi & Inari Sámi

Laura K. Horton — Master's Thesis

Collaborative Game Development with Indigenous Communities;
A Theoretical Model for Ethnocultural Empathy

New Media: Game Design and Production
School of Arts, Design and Architecture
Aalto University
Graduation (12.6.2019)

Amendment: concerning the co-development of *Mulaka*

After the writing and submission of this thesis, additional information concerning the collaborative development of the case study *Mulaka* has been brought to my attention.

During the thesis evaluation process, it came to light that the game's final production was not at the level of co-development that the existing research had suggested.

Currently, *Mulaka's* co-production has been subject to criticism by key members within the Indigenous gaming community and their representative organizations. Dr. Elizabeth LaPensée, *Assistant Professor of Media & Information and Writing, Rhetoric & American Cultures at Michigan State University*, was directly contacted for clarification on this subject. Her input is summarized as follows:

- There are suspicions that certain shortcuts were taken during the collaborative process of the game's production, including heavy reliance on anthropologist Enrique Servín's perspective rather than on the Tarahumara community members themselves.
- Adequate credit to the Indigenous collaborators was not given, especially within promotional materials.
- The integrity of one of the Lienzo game developers has been directly called into question by the Indigenous game development community, including the suggestion of co-opted work from Indigenous game developers.
- Jason Edward Lewis, director of the *Initiative for Indigenous Futures*, has found Lienzo's promotional wording to be problematic e.g., *"We have unearthed old books, crumbling texts and forgotten diaries and gotten the most playable elements, as well as the coolest myths and stories and recorded authentic Tarahumara dialogue."*

As stated in my thesis, I believe that this is a crucial topic that should be thoroughly discussed and shared with researchers, game developers, and Indigenous communities alike. For this reason, as well as for academic reasons, I feel that it is very important for the readers of this work to understand that, while I was not able to attain this inside knowledge during the creation of this thesis, I feel it is my responsibility to share this information now. For these reasons, the production of the game *Mulaka* does not truly fit with the theoretical Intercultural Sensitivity Model proposed by this thesis (appendix B).